ECOLOGICAL PREDICTORS OF CHILDREN'S SOCIAL, EMOTIONAL, AND BEHAVIORAL OUTCOMES

by

Jeffrey Duong, MHS

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ABSTRACT

Introduction: Ecological, transactional, and developmental theories suggest that contextual factors play a crucial role in children's social, emotional, and behavioral development. Currently, little is known about the development of children's social-emotional learning between middle and late childhood. Meanwhile, research is needed to understand the influence of ecological predictors (e.g., home, parental, and community contexts) on children's social, emotional, and behavioral outcomes. Accordingly, we aim to (**1a**) examine the influences of ecological predictors on children's social-emotional competence and behavior outcomes and (**1b & 1c**) assess the moderating role of gender and race/ethnicity in these associations. Moreover, we aim to (**2a**) identify subgroups of children based on their trajectories of social-emotional competence and behavior development and (**2b**) explore the influence of ecological predictors on children's social-emotional competence and behavior trajectories. Lastly, we aim to (**3a**) determine whether children may be distinguished based on their profile of social-emotional competence and (**3b**) evaluate the extent to which ecological predictors influence children's profiles as well as (**3c**) examine associations between children's social-emotional competence profiles and later behavioral outcomes.

Method: Data from the Institute of Education Sciences' Social and Character Development (SACD) Research Program were used. The SACD Program was a multi-site, randomized trial, of seven school-based programs that sought to bolster academic, social, emotional, and behavioral outcomes in children. This occurred between fall 2004 and spring 2007.The program included over 6,000 children from nearly 100 schools who

were followed between grades 3 through 5. Our analytic sample comprised over 3,100 children assigned to control conditions with data from five collection waves: fall grade 3, spring grade 3, fall grade 4, spring grade 4, and spring grade 5. The ecological predictors assessed in this thesis included socio-demographic risk, household chaos, poor parental monitoring/supervision, positive parenting, intergenerational closure, child-centered social control, community access to resources, and community risk. The social, emotional, and behavioral outcomes examined in this thesis included altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. Latent variable modeling was used to address our aims and hypotheses. Specifically, structural equation modeling was used to address aim 1, growth mixture modeling was used to address aim 2, and latent profile analysis was used to address aim 3.

Results: Ecological predictors at grade 3 were significantly associated with children's social-emotional learning outcomes at grade 5 (**1a**). Moreover, the associations between the ecological predictors and social-emotional learning outcomes differed based on children's gender (**1b**) and race/ethnicity (**1c**). Meanwhile, children's development of social-emotional competence and behavior was heterogeneous between grades 3 and 5 (**2a**). Furthermore, ecological predictors at grade 3 significantly influenced children's social-emotional competence and behavior trajectories between grades 3 and 5 (**2b**). Finally, children may be distinguished based on their profiles of social-emotional competence across grades 3 to 5 (**3a**), which were influenced by concurrent ecological

characteristics (**3b**). Children's social-emotional competence profiles also predicted their later behavioral outcomes (**3c**).

Conclusion: Home, parental, and community characteristics play an important role in children's social, emotional, and behavioral outcomes. Addressing these ecological predictors through targeted prevention efforts may improve children's social-emotional learning. They may also predict children's social-emotional competence and behavior trajectories. Furthermore, these contextual characteristics may influence children's social-emotional competence profiles. In light of the heterogeneity with regard to both children's development as well as their patterns of social-emotional competence and behavior, tailoring prevention programs to include indicated intervention strategies may be necessary to ensure successful outcomes. Overall, the findings of this thesis advance our knowledge of positive youth development, which may be particularly important for children's research and advocacy groups, such as the Collaborative for Academic, Social, and Emotional Learning (CASEL).

Keywords: Development, social-emotional learning, middle childhood, late childhood, structural equation modeling, growth mixture modeling, latent profile analysis.

THESIS READERS:

- Catherine Bradshaw, MEd, PhD — Mental Health

  Co-Advisor/Thesis Advisor

- George Rebok, MA, PhD — Mental Health

  Co-Advisor

- Margaret Ensminger, PhD — Health, Behavior and Society

  Committee Chair

- Thomas LaVeist, PhD — Health Policy and Management

ALTERNATES:

- Debra Furr-Holden, PhD — Mental Health

- Kristen Hurley, PhD — International Health

DEDICATION AND THANKS

Reflection

When I was in middle school, one of the most memorable assignments I had was to write an autobiography. The task at the time seemed simple enough: write about important people or events in my life, within a specified page limit. My experience, however, was different from what I had expected. The autobiography has been one of the most challenging works I have had to complete to date.

For those who are not familiar with my background, please let me explain my childhood a little bit more. I am an only child of immigrants. My mom came from Taiwan, and my dad was a refugee from Vietnam. Shortly after coming to America, my parents started working as servers at a Chinese restaurant in the mid-1980s. That was when they met, fell in love, got married, and had me. To pursue the "American Dream," my parents opened their own Chinese restaurant shortly after I was born. Unfortunately, this wound up being an unsuccessful business venture that failed within only a couple of years, severely impacting my family financially as a consequence. To recoup their losses, my mom started working as a server at my Uncle Garry's Chinese restaurant, where she would work until I was 17 years-old. My dad also started working at my uncle's restaurant, but as a chef, and was there until he eventually opened his own wholesale seafood business. Meanwhile, to ensure that I could attend a good elementary school, my parents sent me to live with my grandparents and my Uncle Garry one town over, in Concord, California. My parents and I lived apart from each other until I was 15.

As I was separated from my parents while they worked extensively, it might seem as though the odds were stacked against my own chances for success. One might ask,

"What is going to happen to a child who sees their parents infrequently?" But as it turned out, I was a lucky one. My life was never short on warmth, love, or support, especially from my parents. I was able to spend quality time with my dad on a weekly basis, and he was still around to help me with school projects. For instance, when I was in the first grade, I camped out at my uncle's restaurant after school one afternoon so that my dad could help me construct a leprechaun trap for a St. Patrick's Day project. Our trap was made solely out of Chinese take-out boxes and chopsticks; we had also substituted the requisite lure golden lure with a fortune cookie. Meanwhile, despite having to work on weekends, my mom took enough time off during the week to take me to my piano lessons and tutoring sessions. She also rarely missed an orchestra concert, where my questionable cello-playing skills were on full display. After getting off of work at 9:30 pm on Friday nights, my mom always stopped by my uncle's house to help me put the finishing touches on my Chinese school homework that was due the following day, sticking around until almost midnight. Essentially, my parents did everything they could to infuse my life with opportunities, and worked tirelessly to make sure I would benefit from them. And it paid off.

As I thought about whom else to mention in my autobiography, I started to realize that my life has been blessed with a tremendous amount of social capital, especially from my extended family. For example, my Aunt Olivia used to take me out on her dates with my future Uncle Bill when I was a baby. Ever since, these two have cared for me as though I was their own son. Meanwhile, as I grew older and became more aware of my Asian minority status, my grandmother always entertained my endeavors to assimilate our family into Western culture. This included repeat attempts to prepare spaghetti the

"right" way, an evolution that began with mixing ramen and ketchup, to ramen with Prego sauce, to ramen with Prego sauce and bits of steak, and lastly to actual spaghetti noodles with Prego sauce and bits of steak. We never quite met the spaghetti with meatballs standard, because somehow my seven-year-old self believed that the steak met expectations. And then, there was my grandfather, who quit work to be a stay-at-home grandpa and devoted what years of healthy life he had left to take care of me. He woke up early every morning to take me to school, and picked me up in the afternoon. He stood by me through all of my childhood shenanigans and always tended to my recreational necessities, even if it meant dropping his work to fix the broken arm of my beloved Power Ranger toy, which he once did using a toothpick. My grandfather was far more patient and resourceful than I gave him credit for during the time that he cared for me. And whenever I have had to exercise these abilities, especially during graduate school, I am thankful for how I learned these skills from him.

In addition to my family, my relationships with my friends and their families as well as my neighbors and teachers, and even the cafeteria lady in elementary school who let me work so I could receive a free lunch, were also substantial to my upbringing. As I began to work on my autobiography assignment, I soon realized that the story of my life comprised an endless cast of individuals who had small parts but played very significant roles. Before I knew it, I became overwhelmed. And so, admittedly, I took the easy way out: My first attempt at an autobiography was diluted into a fleshed out timeline of life events that avoided any mention or discussion of those who were a significant part of it. Of course, I do not recall getting a very good grade on that assignment. But now that I am finally finished with my thesis, I have another opportunity to dedicate my work to those

who have helped me come this far. Only this time around, I feel that it is important not to ignore those who have made meaningful contributions to my life and have made this thesis possible. And so, I made a list, although it is important to note that my list is constrained by the limits of time and my flawed memory. If you have managed to read this far, and are someone whom I know but failed to list, please do not hesitate to call this to my attention; not mentioning you was definitely a mistake. Should I ever be fortunate enough to write another dedication to my friends and family, I would hate repeating the mistake. Thank you.

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For I testify that they gave as much as they were able, and even beyond their ability. Entirely on their own, they urgently pleaded with us for the privilege of sharing in this service to the Lord's people.

-2 Corinthians 8:3-4, New International Version.

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I'm everything I am because you loved me.

-Diane Warren (Recorded by Celine Dion)

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CHAPTER 1. INTRODUCTION

1.1 Problem Statement

Developmental research suggests that social-emotional learning during childhood represents a key antecedent to numerous mental health outcomes later in life (Ferguson, Horwood, & Ridder, 2005; Greenberg et al., 2003). For example, youth who engage in problem behaviors during childhood may be at risk for antisocial problems in adulthood, such as criminality, intimate partner violence, or drug and substance abuse in adulthood (Block, Block, & Keyes, 1988; Ensminger, Juon, & Fothergill, 2002; Farrington & Loeber, 2000; Kellam et al., 2008; Loeber & Farrington, 2000). Prevention researchers have therefore sought to develop and implement school-based programs that enhance children's social-emotional learning and curtail problem behaviors (O'Connell, Boat, & Warner, 2009). While much progress has been made, recent evaluations of school-based intervention programs suggest that more work is needed to support these efforts (Durlak, Weissberg, Dymnicki, Taylor, & Shellinger, 2010; Fraser et al., 2011). Specifically, identifying additional modifiable predictors of social-emotional learning, investigating heterogeneity in social-emotional competence, and examining trajectories of social-emotional competence and behavioral outcomes among children may contribute to our knowledge of their development and advance public health endeavors.

1.2 Background

Social and Emotional Development Problems among Children as a Public Health Concern

In 2009, the Institute of Medicine released a report highlighting mental, emotional, and behavioral disorders as major public health problems affecting children,

youth, and young adults (O'Connell, Boat, & Warner, 2009). Social and emotional development problems among children typically manifest as behaviors that include disobeying the rules, lying, or aggression (Loeber & Farrington, 2000). They may also engage in delinquent acts such as theft, truancy, and early substance use. Internalizing problems also represent a major concern. Between 1% and 3% of children may report depressive symptoms in the past year, which increases to between 20% and 50% among youth (Kessler, Avenevoli, & Merikangas., 2001). Furthermore, between 3% and 5% of children may report anxiety problems (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). According to a meta-analysis of data from over 50 community surveys, approximately 6.1% of youth might exhibit behavior problems (O' Connell, Boat, & Warner, 2009). Meanwhile, other studies have estimated that up to 19.1% of youth will have been diagnosed with a behavioral disorder by the age of 18, with median onset at age 11 (Merikangas et al., 2010).

Social, emotional, and behavioral problems (e.g., internalizing or externalizing disorders) in children are a significant resource burden in the United States. For example, those with social and emotional development problems may also negatively impact school systems financially. One study estimated that each child with social, emotional, and behavioral problems could cost the public between $2.8 and $5.8 million (current dollar value) (Cohen & Piquero, 2009). Indeed, children with disruptive behavior problems comprise a majority of referrals to outpatient mental health clinics (Hinshaw & Lee, 2003). Those with early onset conduct problems are also more likely to exhibit antisocial behavior problems later in life, incurring public costs due to law enforcement, court expenditures, detention, or incarceration (Moffitt, 1993; Patterson, DeBaryshe, &

Ramsey, 1989). For instance, the costs of juvenile arrests amount to roughly $18 billion (current dollar value) (National Center on Addiction and Substance Abuse [CASA], 2004). The extraordinary expenses arising from childhood social, emotional, and behavioral problems have made it imperative for public health practitioners to address these concerns through prevention efforts.

Collaborative for Academic, Social, and Emotional Learning (CASEL)

From the 1980s through the 1990s, youth advocates and researchers had implemented numerous programs that addressed an array of childhood health issues and behaviors, such as emotional regulation problems, aggressive behaviors, delinquency, and substance abuse. However, the fragmented and ineffective nature of these programs led to concerns among many leading experts in these fields. In response, the Fetzer Institute hosted a meeting of school-based prevention researchers, educators, and child advocates in 1994 (Greenberg et al., 2003). Together, these educators developed the Social and Emotional Learning (SEL) theoretical framework. The SEL framework guides school-based interventions toward addressing core competencies to improve the wellbeing of children, rather than categorical interventions focusing on specific problems. The Fetzer Institute meeting led to the formation of the Collaborative for Academic, Social, and Emotional Learning (CASEL; Zins, Weissberg, Wang, & Walberg, 2004), which works to develop and evaluate school-based social-emotional learning programs. It also seeks to advance SEL research.

Conceptual Foundations of Social-Emotional Learning

Social-emotional learning (SEL) has been characterized as the process through which individuals develop the requisite skills to successfully perform the following tasks:

recognize, understand, and manage one's own emotions; set and accomplish positive goals; feel and show empathy for others; establish and maintain healthy relationships; navigate social situations constructively; and make responsible decisions (Durlak et al., 2011). The conceptual and empirical foundations of SEL were based on prior research regarding children's social-emotional competence and positive youth development (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Guerra & Bradshaw, 2008; Masten & Coatsworth, 1998; Weissberg, Kumpfer, & Seligman, 2003). Competence has been defined as one's successful adaptation to their environment, as evidenced by their ability to achieve or perform major developmental tasks with respect to their age, gender, culture, society, and time (Masten & Coatsworth, 1998). Meanwhile, the basis for positive youth development has stemmed from the argument that enhancing competence and adopting health promotion strategies are important steps toward preventing negative life outcomes in children (Weissberg et al., 2003). Drawing upon these perspectives, the Collaborative for Academic, Social, and Emotional Learning strives to foster the following general key cognitive, affective, and behavioral competencies in children and youth: (1) relationship skills, (2) social awareness, (3) self-awareness, (4) responsible decision-making, and (5) self-management (Durlak et al., 2011).

Relationship skills. Relationship skills illustrate one's ability to engage and communicate with others socially. These broad skills enable children to establish, build upon, and maintain relationships, and work collaboratively (Zins et al., 2007). An individual's relationship skills may be evidenced by their ability to negotiate complex situations and manage conflicts (e.g., being able to refuse requests from others). Another important indicator of one's relationship skills is the ability to seek or provide help to

others when necessary, which may be demonstrated through engagement in altruistic behavior (Zins et al., 2007). Studies suggest that altruistic behavior is linked with key behavioral outcomes in adolescence, such as aggression or conduct problems (Carlo, Hausmann, Christiansen, & Randall, 2003; Keltikangas-Järvinen, 2006). Thus, altruistic behavior represents an important social-emotional learning outcome in efforts to promote competence and support positive youth development among children.

Social awareness. Social awareness typically encompasses one's ability to appreciate diversity and the perspectives of others (Zins et al., 2007). Children with social awareness skills are able to recognize similarities and differences between individuals. Furthermore, they are cognizant of the physical and verbal cues that other individuals use to express how they feel. Accordingly, children with higher levels of social awareness exhibit greater empathy as well as respect for others' thoughts and feelings (Zins et al., 2007). Research has shown that empathy represents a key predictor of children's developmental outcomes. For example, studies have shown that childhood empathy is negatively associated with aggressive behavior in adolescence (Findlay, Girardi, & Coplan, 2006; Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000). Empathy may also decrease children's likelihood of conduct problems (Hastings et al., 2000; Tremblay, Vitaro, Gagnon, Piché, & Royer, 1992). In light of the research, fostering empathy among children through social awareness promotion programming has been a crucial target in prevention efforts.

Self-awareness. Self-awareness involves one's ability to identify, recognize, and regulate their emotions (Zins et al., 2007). Moreover, children with heightened self-awareness have accurate self-perceptions, namely through being able to see their own

strengths, needs, and values. Thus, self-awareness affords children the psychological insight and understanding necessary for managing themselves and their relationships (Zins et al., 2007). Given these considerations, one's self-awareness skills may also be evidenced by their own self-efficacy. Research suggests that a child's capacity for self-awareness has implications for their development. For example, children who report negative self-perceptions also exhibit internalizing and externalizing problems (Chen, Rubin, & Li, 1995). Meanwhile, studies have shown that self-efficacy may correlate negatively with hostility, anger, and aggression (Donnellan et al., 2005; Heppner et al., 2008). Accordingly, these findings suggest that children's self-efficacy should be addressed in research and intervention endeavors.

Responsible decision-making. Responsible decision-making skills entail the ability to identify and analyze situations (Zins et al., 2007). Responsible decision-making skills also include being able to solve problems effectively. Children who are able to make responsible decisions are also able to engage in self-evaluation and reflection. To that end, they possess a sense of personal, moral, and ethnical responsibility (Zins et al., 2007). Studies have shown that poor responsible decision-making skills, in the form of maladaptive beliefs about aggression, may increase children's risk for behavior problems (Bierman, 2002; Dodge & Petit, 2003; Ialongo, Poduska, Wethamer, & Kellam, 2001; Waschbusch, Walsh, Andrade, King, & Carrey, 2007). The findings thus suggest that addressing children's beliefs about engaging in delinquent behaviors and attitudes about using aggression to solve problems are key competencies in supporting their development (Kazdin, Siegel, & Bass, 1992; Webster-Stratton, Reid, & Hammond, 2001).

Self-management. Self-management skills involve being able to control one's impulses and the ability to manage stress (Zins et al., 2007). Children with self-management skills are self-motivated and disciplined. They are also able to set goals. Moreover, they possess the organizational skills to meet these goals (Zins et al., 2007). Studies have widely shown that children's self-management predicts later behavioral outcomes. For instance, self-management deficits, as indicated by low effortful control or symptoms of attention deficit/hyperactivity disorder, are significantly associated with problematic behavior (Towe-Goodman, Stifter, Coccia, & Cox, 2011; Valiente, Lemery-Chalfant, & Reiser, 2007). Thus, research is needed to identify modifiable predictors of self-management problems among children.

Prevention Efforts through Social-Emotional Learning

Most of the extant prevention efforts and research regarding children's social-emotional learning have taken place in school settings. SEL programming has typically involved addressing both students and the school climate. With regard to students, interventions are designed to teach students how to process, integrate, and apply their social and emotional learning skills, which enable them to behave in ways that are developmentally, contextually, and culturally appropriate (Izard, 2002; Lemerise & Arsenio, 2000). By teaching, modeling, and developing social-emotional skills in children, they may apply these strategies to a variety of other situations. Research suggests that these skills help children accumulate additional developmental assets, which serve to prevent their subsequent involvement in risk and problem behaviors such as aggression, substance abuse, or poor academic performance (Hawkins, Smith, & Catalano, 2004; Zins & Elias, 2006).

With regard to the school climate, teachers and staff are trained to create opportunities that enhance the educational experience of students. Namely, students are encouraged to actively contribute to classroom and school-wide activities, which increase their sense of belonging and motivation (Durlak et al., 2011). Another component of SEL programming is establishing safe and caring learning environments for students, which is accomplished through improving teachers' classroom management and instructional practices, in addition to building a greater sense of community in schools (Schaps, Battistich, & Solomon, 2004). Studies have shown that fostering a greater sense of connectedness in schools reduces an array of negative outcomes in children, including school failure (Bradshaw, O'Brennan, & McNeely, 2008), bullying (O'Brennan, Waasdorp, & Bradshaw, 2014), and substance abuse (Fletcher, Bonell, & Hargreaves, 2008).

A substantial body of research has shown support for universal, school-based, prevention efforts as important strategies for promoting positive attitudes and behaviors while reducing negative outcomes in children. For example, studies have suggested that school-based programs may enhance academic performance and positive youth development (Catalano et al., 2002; Durlak et al., 2011; Zins & Elias, 2006). They have also reported decreases in aggression, substance abuse, and adjustment problems (Greenberg, Domitrovich, & Bumbarger, 2001; Tobler et al., 2000; Wilson & Lipsey, 2007). Despite these promising results, some research suggests that the effects for many school-based interventions may be smaller than desired, or may be limited to children at greater risk for negative outcomes (Hahn et al., 2007; Wilson, Lipsey, & Derzon, 2003; Wilson & Lipsey, 2007). Consequently, there continues to be a need for more studies to

inform and guide both the development and implementation of effective prevention programs for youth.

The Social and Character Development (SACD) Research Program

In light of the growing number of universal, school-based, programs designed to improve student academic achievement, promote positive youth development, and reduce negative behaviors, systematic evaluations of these programs through randomized control trials remain an important area of focus in developmental research. Therefore, the Institute of Education Sciences (IES) of the United States Department of Education and the Division of Violence Prevention in the National Center for Injury Prevention at the Control at the Centers for Disease Control and Prevention (CDC) collaborated to form the Social and Character Develop (SACD) Research Program. The purpose of the program was to evaluate multiple universal, elementary school-based programs that aimed to bolster children's character development and improve behavioral outcomes.

In 2003, the SACD Research Program initiated a grant process that would fund applicants to implement a universal, school-based intervention for elementary school children geared towards promoting positive behaviors and attitudes in addition to reducing negative or antisocial behaviors and attitudes. The grantees would carry out the interventions using a cluster-randomized design with schools as the unit of assignment. They also had the opportunity to propose and utilize additional measures to evaluate their intervention programs. An independent research team that was separate from the grantees, however, would collect and analyze a standardized set of measures to evaluate the intervention programs for the SACD Research Program.

The SACD Research Program funded evaluations for seven programs (Table 1): Academic and Behavioral Competencies Program (ABC; University at Buffalo, State University of New York), Competence Support Program (CSP; University of North Carolina at Chapel Hill), Love in a Big World (LBW; Vanderbilt University), Positive Action (PA; Oregon State University), Promoting Alternative Thinking Strategies (PATHS; The Children's Institute), 4Rs Program: Reading, Writing, Respect, and Resolution (4Rs; New York University), and Second Step (SS; University of Maryland, College Park). Meanwhile, the SACD Research Program contracted Mathematica Policy Research, Inc. (MPR) to conduct the independent, standardized, evaluation of these programs. Together, the researchers and staff at IES, CDC, each of the seven research sites, and MPR formed the Social and Character Development Research Consortium (SACDRC, 2010).

The results of the evaluation showed that the interventions had few significant effects concerning the improvement of children's social, emotional, and behavioral outcomes. In disseminating their findings, the SACDRC hypothesized that "the theories underlying [children's social and character development] or the combinations of activities chosen to bring about the desired changes in students' attitudes and behaviors were inadequate for the purpose" (SACDRC, 2010). The findings and concerns raised in the SACD evaluation, in addition to previous prevention efforts, highlight the need for more work to broaden our understanding of children's social-emotional learning. Specifically, identifying modifiable predictors of social-emotional learning that extend beyond those of peer and school contexts, investigating heterogeneity in social-emotional competence, and examining trajectories of social-emotional competence and behavioral outcomes

among children may contribute to our knowledge of their development and advance public health endeavors.

1.3 Conceptual Model

To extend our knowledge of children's social-emotional learning beyond school influences, we will adopt an "Integrated Transactional-Ecological Social-Emotional Learning Framework" as our conceptual model (Figure 1). We will use this model to guide our understanding of how ecological predictors broadly influence social-emotional learning in children. This model integrates several developmental frameworks, including ecological (Bronfenbrenner & Morris, 1998), transactional (Lynch & Cicchetti, 1998, 2002; Sameroff & Chandler, 1975), and vulnerability/stress (Gutman, Sameroff, & Cole, 2003; Monroe & Hadjiannakis, 2002; Monroe & Simons, 1991; Sroufe et al., 2005). It also draws upon empirically supported theoretical models to identify salient social-emotional learning predictors and outcomes to be included in our conceptual model. Integrating these frameworks with social-emotional learning theory and prior empirical research provide a holistic overview of the relationships between ecological predictors, children's social-emotional learning and competence, and subsequent behavioral outcomes.

Ecological Framework

According to ecological systems theory (Bronfenbrenner & Morris, 1998), human development occurs through proximal processes that occur over time. We represent these features in our conceptual model (Figure 1) using causal arrows between the ecological factors and individual factors. Illustrating the chronosystems component of the ecological model, we show the temporal aspect of these relationships using the time

arrow. A key assumption of the ecological model is that proximal processes occur within nested contexts that span multiple levels, from "micro" to "macro." We therefore highlight the microsystems (e.g., home, family, peer, school, community/culture) using the ecological factors box. Mesosystems describe relationships between microsystems (Bronfenbrenner & Morris, 1998), which we illustrate using connected arrows on the left side of the ecological factors box. Meanwhile, exosystems comprise the influence of factors that are not necessarily measurable or might not impact individuals directly, but may still affect the microsystems in the model (Bronfenbrenner & Morris, 1998); accordingly, we illustrate these systems using a black residual effects arrow in the upper right corner of the ecological factors box. Finally, macrosystems include broader contextual influences that affect an individual's outcomes (Bronfenbrenner & Morris, 1998). Therefore, we included an additional residual effects arrow in the upper right of the individual factors box to represent macrosystems.

Transactional Framework

According to transactional theory (Cicchetti & Toth, 1997; Lynch & Cicchetti, 1998, 2002; Sameroff & Chandler, 1975), not only is it important to consider associations between ecological, psychological, and social factors in studying children's development, but the complex nature of these relationships must be accounted for as well. Specifically, transactional models emphasize the dynamic relationships between proximal and distal factors in assessing children's development. The child and the environment are in a constant state of flux given these bidirectional influences. Thus, we represent these dynamic and transactional associations in our conceptual model using reciprocal arrows between the ecological factors and individual factors. We also represent these influences

in our conceptual model through accounting for dynamic and reciprocal associations between home, family, peer, school, and community/cultural environments.

Among the theories representing transactional perspectives, concepts related to person-environment fit (Eccles et al., 1993) are of particular interest to our model. According to person-environment fit theory (Eccles et al., 1993), a match or "fit" between the characteristics of an individual and their environment plays an important role in shaping developmental outcomes. Consistent with transactional perspectives, developmental outcomes are the result of a dynamic interplay between an individual and their environment (Compas, Hinden, & Gerhardt, 1995). When environments are unable to meet the needs of a developing individual, a mismatch may occur, which ultimately could result in distress or disorder. In other instances, environments may present challenges to the adaptive capacities of an individual. Those who may be able to overcome these environmental challenges would exhibit more favorable social, emotional, and behavioral outcomes (Compas, Hinden, & Gerhardt, 1995). We represent these person-environment fit relationships in our conceptual model by accounting for potential associations between ecological predictors (e.g., environmental characteristics) and children's social-emotional competence profiles and trajectories (e.g., individual characteristics).

Vulnerability/Stress Framework

Our conceptual model considers the various ecological and individual factors and processes that contribute to one's social, emotional, and behavioral development. We posit these influences as stress/risk, promotive, vulnerability, or protective factors. Stressors or risk factors are characterized as conditions or events that unfavorably affect

the psychological or biological capacities of individuals, whereas promotive factors support favorable outcomes for individuals (Cohen, Kessler, & Gordon, 1995; Fergus & Zimmerman, 2005; Grant et al., 2003; Lazarus & Folkman, 1984). Vulnerability factors, or diatheses, are characterized as pre-dispositional factors that make it possible for stressors or risk factors to adversely affect individuals' social, emotional, and behavioral development. In contrast, protective factors buffer individuals from the negative consequences of stress or risk factors (Luthar, Cicchetti, & Becker, 2000). Stress and vulnerability factors can affect development in a variety of ways, such as through additive, ipsative, mega-diathesis stress, allostatic load, and kindling processes (Monroe & Hadjiannakis, 2002; McEwen, 1998; McEwen & Seeman, 1999; Post, 1992). Our conceptual model appreciates the different relationships between factors by acknowledging the possibility that ecological and individual factors may have both direct and indirect (e.g., mediating and moderating) influences on children's social-emotional learning.

Theoretical Models

In addition to the previously discussed ecological, transactional, and vulnerability/stress frameworks, our conceptual model draws upon integrative and domain-specific approaches to inform our understanding of children's social, emotional, and behavioral development (Grusec & Davidov, 2010). These approaches consider the specificity through which ecological predictors may affect individual outcomes. Research has widely recognized that ecological contexts represent multidimensional constructs (Shelton, Frick, & Wootton, 1996; Wolkow & Ferguson, 2001). Accordingly, there has been progress in determining the effects of specific dimensions or characteristics of

contextual constructs on children's social, emotional, and behavioral development (Conger et al., 2002; Deater-Deckard & Dodge, 1997; Dodge & Petit, 2003). The subsequent sections highlight several theoretical advancements linking ecological predictors to youth social, emotional, and behavioral outcomes that inform our conceptual model.

Home. Studies have widely shown that the home environment of a child can have significant impacts on their social, emotional, and behavioral development (Conger et al., 1999; McLeod & Nonnemaker, 2000). Moreover, research has suggested that the home environment may be understood along its social and physical dimensions, which may affect different developmental outcomes in children (Evans, 2004; Matheny, Wachs, Ludwig, & Phillips, 1995). According to social theory, household socioeconomic status represents a measurement of capital, which could be material (e.g., income), humanistic (e.g., education), and social (e.g., relationships) (Coleman, 1990; Oakes & Rossi, 2003). Meanwhile, ample studies have shown that limited material capital can adversely affect children's social, emotional and behavioral development (Evans et al., 2005). In addition, the family stress model suggests that children residing in households characterized by high economic pressure may exhibit diminished mastery beliefs (e.g., self-efficacy and control) and greater emotional distress later in adolescence (Ackerman, Brown, & Izard, 2004; Conger, Rueter, & Conger, 2000). Economic pressure represents a measure of unmet material needs, the inability to make ends meet, and financial cutbacks, which are often the result of low family income and the experience of negative financial events (Conger et al., 2002). Most research to date on how the home's social dimensions impact children's social, emotional, and behavioral development has focused on economic

pressure and limited material capital. However, the impacts of other socio-demographic stressors in the home require further exploration (Evans et al., 2005).

The physical environment of the home is also an important consideration in understanding children's social-emotional development (Matheny, Wachs, Ludwig, & Phillips, 1995; Evans et al., 2005; Evans, 2006). Studies have begun to determine the influence of household chaos on children's social-emotional competence and behavior (Matheny et al., 1995; Evans et al., 2005; Evans, 2006). Household chaos is typically characterized by high levels of noise, crowding, and situational traffic patterns in the home (Matheny et al., 1995). Exposure to household chaos has been linked to increased social withdrawal and problematic behavior in children (Maxwell, 2003). Moreover, children in chaotic households are more likely to exhibit poor self-regulation or psychological distress (Deater-Deckard et al., 2009; Evans et al., 2005). Despite these reports, little longitudinal research has assessed the social-emotional and behavioral consequences of household chaos, especially between during late childhood. More recently, there have been efforts to identify the influence of household chaos on children while accounting for socioeconomic and parental characteristics (Evans et al., 2005). However, more research is needed to study the multiple effects of household chaos with other ecological predictors on children's social-emotional development.

Parents and Family. According to the developmental model of antisocial behavior (Patterson, DeBaryshe, & Ramsey, 1989), parenting strongly affects youth during childhood. Specifically, ineffective parenting practices, such as poor parental monitoring and supervision, strongly undermine children's social, emotional, and behavioral outcomes. Consequently, children displaying poor social-emotional

competence are at risk for rejection by their peers, which may lead them to gravitate towards antisocial peer groups. Associating with antisocial peers may lead to a cascade effect: children might adopt normative beliefs about aggression and delinquency, which further compromises their social, emotional, and behavioral development (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Vuchinich, Bank, & Patterson, 1992).

The extant literature has focused greatly on ineffective parenting and its negative developmental consequences (Pettit et al., 2001). However, recent studies on positive youth development have galvanized efforts to determine how some parenting practices may have promotive effects on children's social, emotional, and behavior outcomes (Hastings et al., 2000; Luthar, Cicchetti, & Becker, 2000; Rutter, 2000). In particular, empirical studies have shed light on the influence of positive parenting, especially with regard to pro-social behavior (Bor, Sanders, & Markie-Dadds, 2002; Sanders, 1999). Thus, it is crucial to consider both the stress and promotive influences of parenting in our conceptual model.

Peers and School. During childhood, peer interactions play a crucial role in social, emotional, and behavioral development. For example, these interactions present children with opportunities to foster their understanding of justice and fairness. They also learn how to resolve conflicts, which furthers their social-emotional learning (Singer, Golinkoff, & Hirsh-Pasek, 2006). Establishing friendships and relationships with peers is particularly important. During middle childhood, peer groups begin to form, and relationships based on trust begin to develop (Ladd, 1999). We can assess children's relationships with their peers based on their experiences with acceptance and rejection (Bierman, 2004; Ladd, 1999; Rubin, Bukowski, & Parker, 2006). According to Crick and

Dodge's (1994) social information processing model, children who get along with their peers are more effective at interpreting social cues and establishing goals that enhance relationships (e.g., being helpful). They also acquire skills for problem solving, which promotes healthy psychological adjustment later in childhood (Burgess et al., 2006). In contrast, children with difficult relationships or who are rejected by their peers may develop biased social expectations. They selectively attend to hostile cues, form negative expectations, and may establish self-serving social goals (e.g., satisfying an impulse or getting even with a peer), which lead to problematic outcomes (Arsenio & Lemerise, 2004). Given the influence of peer relationships on children's social-emotional learning, peer characteristics concerning acceptance and rejection are included in our conceptual model.

School settings represent an important ecological context that affect both the physical and social-emotional development of children. For example, school climate and safety have been linked with aggressive behaviors among students in schools (Espelage, Bosworth, & Simon, 2000; Goldstein, Young, & Boyd, 2008). School staff members also play an important role in providing warmth and support to students, which promote social-emotional learning (Jennings & Greenberg, 2009). For example, supportive teachers can develop mastery-oriented attributions in children (Eccles & Wigfield, 2002). Meanwhile, children in unfavorable school contexts are at risk for an array of negative social, emotional, and behavioral outcomes. These include problems with self-management and social awareness (e.g., distractibility, low task involvement, less consideration of others) (La Paro & Pianta, 2000). In addition, teachers who frequently provide negative feedback on students' abilities can increase the students' risk for learned

helplessness (Skinner, Zimmer-Gembeck, & Connell, 1998). Overall, because children spend extensive periods of time in school, the quality of their relationships with teachers and classmates are important considerations in their social, emotional, and behavioral development (Wang, 2009). Thus, a substantial proportion of prevention research concerning children has focused on these contexts relative to other ecological domains.

Community and Culture. A growing body of literature has called for a closer examination of how community factors may influence children's social, emotional, and behavioral outcomes (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). According to social disorganization theory (Sampson & Groves, 1989), community dimensions may include residential efforts to supervise and control youth (e.g., child-centered social control) and the presence of informal ties between neighbors (e.g., intergenerational closure). As youth transition from middle childhood to late childhood and adolescence, they begin to spend more time away from home and their caregivers (Brody et al., 2001). Thus, community characteristics begin to play a greater role in shaping children's social, emotional, and behavioral development. Given the empirical research on how community disorganization may increase youth risk behaviors (Sampson, Morenoff, & Gannon-Rowley, 2002), we include such constructs in our model (e.g., intergenerational closure and child-centered social control).

In addition to social disorganization theory, institutional models have highlighted how the availability of resources in a community may promote children's social, emotional, and behavioral development (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). Specifically, children residing in communities with greater access to parks, libraries, community centers, and youth programs are more likely to experience enriching

activities that support social-emotional learning (Chase-Lansdale et al., 1997). Meanwhile, in contrast to institutional models, epidemic or contagion models emphasize community risk (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). Research has shown that children who are exposed to community risk (e.g., violence or gangs) are more likely to adopt negative behaviors through social learning (Guerra, Huesmann, & Spindler, 2003; Ingoldsby & Shaw, 2002; Osofsky, 1995). Alternatively, the stress arising from community risk may increase children's likelihood of reporting adjustment problems during adolescence (Gorman-Smith & Tolan, 1998; Ingoldsby & Shaw, 2002). Others may become frustrated or desensitized to their high-risk community environment, which might undermine their development of empathy (Farrell & Bruce, 1997; Ingoldsby & Shaw, 2002). Taken together, institutional and epidemic or contagion models highlight how the influence of community resources and risk should be considered in studying children's social, emotional and behavioral development.

Understanding the Integrated Transactional-Ecological Social-Emotional Learning Framework from a Social Epidemiological Perspective

The ecological predictors identified in our conceptual model and their operationalization share numerous similarities with key multi-level and dynamic theoretical frameworks and perspectives employed in social epidemiology (Krieger, 2001). These include ecosocial theory (Krieger, 1994), eco-epidemiology (Susser & Susser, 1996), and the social-ecological systems perspective (McMichael, 1999). Ecosocial theory (Krieger, 1994) highlights the relationships between persons, groups, and societal forces, which drive individual health. Meanwhile, eco-epidemiology (Susser & Susser, 1996) emphasizes the organization of predictors into nested contexts or

systems, which interact with one another. Lastly, McMichael's (1999) social-ecological systems perspective explains how proximal and distal factors influence individuals over the life course. The characteristics of these frameworks that overlap with our integrated conceptual model entail the organization of predictors across multiple contextual levels (e.g., home, family, community), which yield dynamic influences that may occur through various specific processes. Moreover, predictors that are "ecological" are broadly defined across these frameworks, and are typically governed by empirically-supported theoretical models or the extant literature (Krieger, 2001). As illustrated in our conceptual model, these frameworks share an appreciation for how "ecology" represents the study of how living organisms and inanimate matter and energy engage in evolving interactions over time and space (Krieger, 2001). Accordingly, "ecological predictors" is a term that is generally meant to describe the broad array of factors found within various contexts that may influence individual outcomes (Lynch & Cicchetti, 1998).

1.4 Gaps in the Literature

The Impact of Home, Parental, and Community Characteristics

As previously discussed, most efforts to research and intervene in children's social-emotional development have taken place in schools (Durlak et al., 2011). However, recent evaluations of school-based prevention programs suggest the need to consider additional modifiable predictors found in other ecological contexts (SACDRC, 2010). To that end, it will be important to draw upon integrative ecological, transactional, and developmental frameworks to study how multiple contexts influence children's social, emotional, and behavioral development. Furthermore, despite the promising research concerning children's social-emotional learning, more studies employing robust

longitudinal data as well as larger and more diverse samples are needed to support prior research. This work will be essential in identifying targets for interventions aiming to promote positive social, emotional, and behavioral outcomes among children.

To date, there have been few longitudinal efforts that have comprehensively studied how multiple dimensions of home, parental, and community contexts influence children's social-emotional learning. Rather, most studies have focused on specific ecological domains (Conger et al., 2002; Deater-Deckard & Dodge, 1997; Dodge & Petit, 2003; Pratt, Turner, & Piquero, 2004). For example, with regard to the home, there is ample evidence suggesting that economic pressure and limited material capital adversely affect children's social-emotional outcomes (Evans et al., 2005). However, less work has assessed the social-emotional learning consequences among children who are residing in households marked by socio-demographic risk, a cumulative measure of stress characterized by living in a household managed by single parent, poverty, or being raised by a caregiver who has not completed high school (Appleyard, Egeland, Van Dulmen, & Sroufe, 2005; Deater-Deckard, Dodge, Bates, & Pettit, 1998). Much of the extant literature has instead focused on the effects of these particular risk factors individually, but not incrementally (Furstenberg Jr., & Hughes, 1995; Sirin, 2005). Most research on socio-demographic risk has also been cross-sectional, while others have focused narrowly on specific sets of outcomes (e.g., externalizing problems only) without considering their broader impacts on an array of other social-emotional learning outcomes (Bradley & Corwyn, 2002; Chen, Matthews, & Boyce, 2002).

With regard to parenting, research has frequently linked ineffective parenting to children's behavior problems, but fewer studies have examined its effects on social-

emotional learning beyond aggressive attitudes. Furthermore, little research has investigated the associations between multiple dimensions of parenting and a broad array of outcomes. Rather, most have studied the influence of parenting on sets of positive or negative outcomes separately (Cowan, Cowan, & Schulz, 1996; Prevatt, 2003). Furthermore, although numerous studies have shown that community disorganization may increase youth risk behaviors (Sampson, Morenoff, & Gannon-Rowley, 2002), our understanding of how specific community characteristics affect children's social-emotional learning is limited. Prior research has suggested that community influences may only yield modest effects on children's outcomes (Ingoldsby & Shaw, 2002). Yet, more research is needed to corroborate these findings. Overall, the influence of multiple home, parental, and community characteristics on children's social-emotional learning requires further exploration.

The Transition between Middle and Late Childhood

Most studies on social, emotional, and behavioral development have focused on two key developmental periods. The first is the transition between early and middle childhood, which encompasses the time when youth are entering school. The other period is the transition between childhood and adolescence, as youth enter puberty. Despite the substantial body of literature concerning children's development, there is a dearth of research concerning the transition between middle and late childhood. Research on early childhood environments has been essential given the advancement in studies involving developmental cascade models (Masten & Cicchetti, 2010). Empirical efforts have particularly emphasized the importance of parenting during early childhood (Pettit et al., 2001; Webster-Stratton, Reid, & Hammond, 2001). In addition, studies have identified

the effects of other key ecological predictors in early childhood, such as preschool/daycare or the home environment, and their impact on children's cognitive and social outcomes, such as language skills, social withdrawal, and externalizing behavior (Ladd & Burgess, 1999; Miner & Clarke-Stewart, 2008; Peisner-Feinberg et al., 2001; Silver, Measelle, Armstrong, & Essex, 2005). In addition to early childhood, numerous studies have examined the transition between late childhood and adolescence. Given the emergence of antisocial and delinquent behaviors during this developmental period, most studies have focused largely on disruptive behaviors, aggression, or substance abuse (Fite, Colder, Lochman, & Wells, 2008; Oh et al., 2008; Phelps et al., 2007; Vitaro, Brendgen, & Wanner, 2005). Considering the wealth of research on early childhood and adolescence, the period spanning middle and late childhood, which includes the later elementary school years, remains a critical gap in the literature.

Between middle and late childhood, important changes in developmental tasks for children begin to occur. By the end of early childhood, most youth will have developed highly positive, and potentially unrealistically optimistic, self-expectations after receiving much individualized attention from their caregivers (Eccles et al., 1984). However, entry into middle childhood and school marks a period in which youth more frequently receive competence-related feedback, obtain performance evaluations using objective measures, and experience comparisons to others (Eccles et al., 1983; Eccles, Midgely, & Adler, 1984). As children begin to recognize their strengths and weaknesses in relation to others, most will develop lower and more realistic self-beliefs (Eccles, Wigfield, Harold, & Blumenfeld, 1993). Throughout middle and late childhood, however, children will begin to engage in various self-enhancing activities (e.g., exceling in school, playing

sports, and addressing physical appearance) that bolster their self-concepts (Cole et al., 2001). In school, children will also begin to draw upon previously acquired social and cognitive skills as means for obtaining new knowledge and engage in critical thinking (Altermatt & Pomerantz, 2003; Bub, 2009). Given the shifts in developmental tasks and social-emotional changes that youth experience during the later elementary school years, there is a need for more research to shed light on children's development during this transitional period.

Integrating Variable-Centered and Person-Centered Approaches

Most of the extant research investigating children's social, emotional, and behavioral development has involved variable-centered analytic approaches to assess the influence of ecological predictors. These approaches, however, assume that populations are homogeneous and that the effects of predictors are similar across subgroups of children (Muthén & Muthén, 2000). Rather than conceptualizing variables as predictors and outcomes, person-centered approaches on the other hand use variables to represent properties of individuals and identify distinct categories or groups of individuals based on a set of these properties. In this manner, person-centered approaches account for heterogeneity in populations (McCutcheon, 1987; Muthén & Muthén, 2000). Whereas variable-centered approaches may further our knowledge on how ecological influences could be linked to subsequent changes in social-emotional outcomes, person-centered approaches allow us to determine whether groups of individuals may differ based on their trajectories or profiles of social-emotional competence and behavior. As an alternative to variable-centered analyses, person-centered approaches are becoming increasingly popular in developmental research.

Studies using person-centered analytic approaches have suggested that groups of children may follow distinct trajectories of social-emotional development. Much of the research, however, has focused on negative outcomes such as aggression or delinquency (Bradshaw, Schaeffer, Petras, & Ialongo, 2010; Moffit, 2006). More recently, however, studies have begun to investigate trajectories of positive social-emotional development (Kokko et al., 2006; Lewin-Bizan et al., 2010; Phelps et al., 2007). Yet, these efforts have been limited in a variety of ways, such as their focus on adolescence or use of global measures of positive development rather than specific social-emotional outcomes. In addition to investigations concerning developmental trajectories, the determination of whether children may be heterogeneous with regard to their social-emotional competence represents another key gap in our knowledge. Previous research suggests that children may differ based on their social-cognition and information-processing. Yet, there has been little research concerning whether children may be distinguished based on their profiles of social-emotional competence (Crick & Dodge, 1994; Masten et al., 1999; Sharp, Croudace, & Goodyer, 2007). Determining whether children may be classified into subtypes based on their trajectories or profiles of social-emotional competence and behavior is essential in developing targeted prevention efforts (Magnusson & Cairns, 1996).

Through integrating variable- and person-centered approaches in studying children's social-emotional development, we will be able to address crucial research questions concerning person-environment fit theory (Eccles et al., 1993). As previously discussed, this theory suggests that one's social, emotional, and behavioral outcomes arise from the fit between their individual characteristics and the characteristics of their

environment. Using person-centered approaches, we will be able to identify one's individual characteristics, namely their trajectory or profile of social-emotional competence and behavior. Using variable-centered approaches, we may assess one's environment, specifically through measuring key ecological predictors. Through examining the influence of ecological predictors on one's social-emotional competence profiles and trajectories, integrating variable- and person-centered approaches shall shed light on the role of person-environment fit in shaping a person's development between middle and late childhood.

1.5 Thesis Overview

Studies have widely shown that ecological predictors spanning multiple contexts play an important role in influencing children's social, emotional, and behavioral development, which may in turn affect their outcomes later in life (O'Connell, Boat, & Warner, 2009; Fergusson, Horwood, & Ridder, 2005). However, critical gaps persist in our understanding of children's social-emotional learning between middle and late childhood. This thesis research represents our endeavor to address these gaps. We will use data from a large and diverse sample of elementary school children who were followed from third through fifth grade as part of the Institute of Education Sciences' Social and Character Development (SACD) Research Program, which was a multi-site evaluation of seven school-based programs. Our efforts will integrate variable- and person-centered approaches to study the impact of home, parental, and community characteristics on children's development between middle and late childhood. The findings from this thesis will advance child development and prevention research by identifying additional modifiable targets for intervention efforts and exploring how

programs may be tailored to youth based on their heterogeneity in social, emotional, and behavioral outcomes.

In **Chapter 2**, we use structural equation modeling to examine the influences of ecological predictors on children's social-emotional learning outcomes. We also assess the moderating role of gender and race/ethnicity in these associations. Moreover, in **Chapter 3**, we use growth mixture modeling to identify subgroups of children based on their trajectories of social-emotional competence and behavior development. We also explore the influence of ecological predictors on children's social-emotional competence and behavior trajectories. Then in **Chapter 4**, we use latent profile analysis to determine whether children may be distinguished based on their profile of social-emotional competence, and evaluate the extent to which ecological predictors influence these profiles. We also examine associations between children's social-emotional competence profiles and later behavioral outcomes. In **Chapter 5**, we present a summary of our research efforts, outline directions for future research, and highlight the significance of our findings with regard to public health and policy.

1.6 Specific Aims

Ecological, transactional, and developmental theories have highlighted the importance of home, parental, and community characteristics and their risk and promotive effects on children's outcomes. Accordingly, the ecological predictors in our studies include the following potential risk characteristics: socio-demographic risk, household chaos, poor parental monitoring and supervision, and community risk. Meanwhile, the ecological predictors in our studies include the following potential promotive characteristics: positive parenting, intergenerational closure, child-centered

social control, and community access to resources. Social-emotional learning theory suggests that both positive and negative outcomes must be considered in studies concerning children's development. The positive social, emotional, and behavioral outcomes in our studies include: altruistic behavior, empathy, and self-efficacy for peer interaction. Furthermore, the negative social, emotional, and behavioral outcomes in our studies include: normative beliefs about aggression and ADHD-related behavior.

The predictors and outcomes of our studies were measured at the following time points: fall grade 3, spring grade 3, fall grade 4, spring grade 4, and spring grade 5. Given the longitudinal nature of our research, it is important to acknowledge how specific changes in each of our selected outcomes may be indicative of positive or negative social-emotional development. Indicators of positive development would include increasing altruistic behavior, empathy, and self-efficacy for peer interaction, as well as decreasing normative beliefs about aggression and ADHD-related behavior. Promotive factors would demonstrate positive relationships with these developmental outcomes. In contrast, decreasing altruistic behavior, empathy, and self-efficacy for peer interaction, as well as increasing normative beliefs about aggression and ADHD-related behavior may characterize negative social-emotional development. Risk factors would exhibit positive associations with these developmental outcomes. We present the specific aims of our research chapters seeking to elucidate these effects in the subsequent sections.

Chapter 2. Ecological Predictors of Children's Social-Emotional Learning: Gender and Race as Moderators

Aim 1a. To examine the influence of ecological predictors at grade 3 on children's social-emotional competence and behavior at grade 5.

Hypothesis 1a.1. Risk characteristics at grade 3 will positively predict negative outcomes at grade 5. Specifically, socio-demographic risk, household chaos, poor monitoring/supervision, and community risk at grade 3 will be positively associated with normative beliefs about aggression and ADHD-related behavior at grade 5.

Hypothesis 1a.2. Promotive characteristics at grade 3 will positively predict positive outcomes at grade 5. Specifically, positive parenting, intergenerational closure, child-centered social control, and community access to resources at grade 3 will be positively associated with altruistic behavior, empathy, and self-efficacy for peer interaction at grade 5.

Hypothesis 1a.3. Risk characteristics at grade 3 will negatively predict positive outcomes at grade 5. Specifically, socio-demographic risk, household chaos, poor monitoring/supervision, and community risk at grade 3 will be negatively associated with altruistic behavior, empathy, and self-efficacy for peer interaction at grade 5.

Hypothesis 1a.4. Promotive characteristics at grade 3 will negatively predict negative outcomes at grade 5. Specifically, positive parenting, intergenerational closure, child-centered social control, and community access to resources at grade 3 will be negatively associated with normative beliefs about aggression and ADHD-related behavior at grade 5.

Aim 1b. To assess the moderating role of gender on associations between ecological predictors at grade 3 and children's social-emotional competence and behavior at grade 5.

Hypothesis 1b. Associations between ecological predictors at grade 3 and children's social-emotional competence and behavior at grade 5 will vary differentially between boys and girls.

Aim 1c. To determine the moderating role of race/ethnicity (e.g., White, Black, Hispanic/Latino, or an other race/ethnicity) on associations between ecological predictors at grade 3 and children's social-emotional competence and behavior at grade 5.

Hypothesis 1c. Associations between ecological predictors at grade 3 and children's social-emotional competence and behavior at grade 5 will vary differentially between children who are White, Black, Hispanic/Latino, or an other race/ethnicity.

Chapter 2 will explain, and highlight, the importance of utilizing approaches informed by gender and race/ethnicity to study the associations outlined in Aims 1b and 1c.

Chapter 3. Ecological Influences on Children's Social-Emotional Competence and Behavior Trajectories

Aim 2a. To identify subgroups of children based on their trajectories of social-emotional competence and behavior development spanning five time points from fall grade 3 to spring grade 5.

Hypothesis 2a.1. Subgroups of children with trajectories of negative social-emotional competence and behavior development will emerge. Specifically, these include decreasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction, as well as increasing

trajectories of normative beliefs about aggression and ADHD-related behavior.

Hypothesis 2a.2. Subgroups of children with trajectories of positive social-emotional competence and behavior development will emerge. Specifically, these include increasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction, as well as decreasing trajectories of normative beliefs about aggression and ADHD-related behavior.

Aim 2b. To explore the influence of ecological predictors in grade 3 on children's social-emotional competence and behavior trajectories spanning five time points from fall grade 3 through spring grade 5.

Hypothesis 2b.1. Risk characteristics at grade 3 will positively predict trajectories of negative social-emotional competence and behavior development. Specifically, socio-demographic risk, household chaos, poor monitoring/supervision, and community risk at grade 3 will be positively associated with decreasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction as well as increasing trajectories of normative beliefs about aggression and ADHD-related behavior.

Hypothesis 2b.2. Promotive characteristics at grade 3 will positively predict trajectories of positive social-emotional competence and behavior development. Specifically, positive parenting, intergenerational closure, child-centered social control, and community access to resources at grade 3 will be positively associated with increasing trajectories of altruistic

behavior, empathy, and self-efficacy for peer interaction as well as decreasing trajectories of normative beliefs about aggression and ADHD-related behavior.

Hypothesis 2b.3. Risk characteristics at grade 3 will negatively predict trajectories of positive social-emotional competence and behavior development. Specifically, socio-demographic risk, household chaos, poor monitoring/supervision, and community risk at grade 3 will be negatively associated with increasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction as well as decreasing trajectories of normative beliefs about aggression and ADHD-related behavior.

Hypothesis 2b.4. Promotive characteristics at grade 3 will negatively predict trajectories of negative social-emotional competence and behavior development. Specifically, positive parenting, intergenerational closure, child-centered social control, and community access to resources at grade 3 will be negatively associated with decreasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction as well as increasing trajectories of normative beliefs about aggression and ADHD-related behavior.

Chapter 4. Ecological Predictors and Behavioral Outcomes of Children's Social-Emotional Competence Profiles

Aim 3a. To determine whether children may be distinguished based on profiles of social-emotional competence across five data collection waves spanning fall grade 3 to spring grade 5.

Hypothesis 3a.1. Children with profiles of negative social-emotional competence will emerge. Specifically, these profiles may be characterized by low altruistic behavior, low empathy, low self-efficacy for peer interaction, as well as high normative beliefs about aggression and high ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Hypothesis 3a.2. Children with profiles of positive social-emotional competence will emerge. Specifically, these profiles may be characterized by high altruistic behavior, high empathy, high self-efficacy for peer interaction, as well as low normative beliefs about aggression and low ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Aim 3b. To evaluate the extent to which concurrent ecological characteristics influence children's social-emotional competence profiles across five data collection waves spanning fall grade 3 to spring grade 5.

Hypothesis 3b.1. Concurrent risk characteristics will positively influence profiles of negative social-emotional competence. Specifically, concurrent socio-demographic risk, household chaos, poor monitoring/supervision, and community risk will be positively associated with profiles of social-emotional competence characterized by low altruistic behavior, low empathy, low self-efficacy for peer interaction, as well as high normative beliefs about aggression and high ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Hypothesis 3b.2. Concurrent promotive characteristics will positively influence profiles of positive social-emotional competence. Specifically, concurrent positive parenting, intergenerational closure, child-centered social control, and community access to resources will be positively associated with profiles of social-emotional competence characterized by high altruistic behavior, high empathy, high self-efficacy for peer interaction, as well as low normative beliefs about aggression and low ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Hypothesis 3b.3. Concurrent risk characteristics will negatively influence profiles of positive social-emotional competence. Specifically, concurrent socio-demographic risk, household chaos, poor monitoring/supervision, and community risk will be negatively associated with profiles of social-emotional competence characterized by high altruistic behavior, high empathy, high self-efficacy for peer interaction, as well as low normative beliefs about aggression and low ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Hypothesis 3b.4. Concurrent promotive characteristics will negatively influence profiles of negative social-emotional competence. Specifically, concurrent positive parenting, intergenerational closure, child-centered social control, and community access to resources will be negatively associated with profiles of social-emotional competence characterized by low altruistic behavior, low empathy, low self-efficacy for peer

interaction, as well as high normative beliefs about aggression and high ADHD-related behavior across five data collection waves between fall grade 3 and spring grade 5.

Aim 3c. To examine associations between children's social-emotional competence profiles and later behavioral outcomes, linking social-emotional competence profiles identified across four data collection waves (e.g., fall grade 3, spring grade 3, fall grade 4, and spring grade 4) to behavior outcomes measured across four subsequent data collection waves (e.g., spring grade 3, fall grade 4, spring grade 4, and spring grade 5). For example, we will assess associations between social-emotional competence profiles measured at spring grade 3 and behavior outcomes measured at fall grade 4.

Hypothesis 3c.1. Profiles of negative social-emotional competence will positively predict later problem behaviors. Specifically, profiles of social-emotional competence characterized by low altruistic behavior, low empathy, low self-efficacy for peer interaction, as well as high normative beliefs about aggression and high ADHD-related behavior identified across four data collection waves from fall grade 3 to spring grade 4 will be positively associated with problem behaviors measured across four data collection waves from spring grade 3 to spring grade 5, respectively.

Hypothesis 3c.2. Profiles of positive social-emotional competence will positively predict later positive behaviors. Specifically, profiles of social-emotional competence characterized by high altruistic behavior, high empathy, high self-efficacy for peer interaction, as well as low normative

beliefs about aggression and low ADHD-related behavior identified across four data collection waves from fall grade 3 to spring grade 4 will be positively associated with positive behaviors measured across four data collection waves from spring grade 3 to spring grade 5, respectively.

Hypothesis 3c.3. Profiles of negative social-emotional competence will negatively predict later positive behaviors. Specifically, profiles of social-emotional competence characterized by low altruistic behavior, low empathy, low self-efficacy for peer interaction, as well as high normative beliefs about aggression and high ADHD-related behavior identified across four data collection waves from fall grade 3 to spring grade 4 will be negatively associated with positive behaviors measured across four data collection waves from spring grade 3 to spring grade 5, respectively.

Hypothesis 3c.4. Profiles of positive social-emotional competence will negatively predict later problem behaviors. Specifically, profiles of social-emotional competence characterized by high altruistic behavior, high empathy, high self-efficacy for peer interaction, as well as low normative beliefs about aggression and low ADHD-related behavior identified across four data collection waves from fall grade 3 to spring grade 4 will be negatively associated with problem behaviors measured across four data collection waves from spring grade 3 to spring grade 5, respectively.

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Table 1

Summary of the Social and Character Development Programs

Program/Source	Curriculum Structure & Features	Site & Research Institution
Academic and Behavioral Competencies Program -Center for Children and Families -University at Buffalo, State University of New York	Classroom curriculum and targeted component Social skills training and behavior management	Buffalo, New York, and two charter schools University at Buffalo, State University of New York
Competence Support Program -School of Social Work -University of North Carolina-Chapel Hill	Classroom curriculum and intensive teacher training Social and emotional learning, social dynamics training, and behavior management: social information processing, social problem solving, peer networks	Hoke & Wayne Counties, North Carolina University of North Carolina at Chapel Hill
Love in a Big World -Love in a Big World -Nashville, TN	Classroom curriculum and whole-school approach Character education: courage, honesty, kindness, caring	Maury & Murfreesboro Counties, Tennessee Vanderbilt University
Positive Action -Positive Action, Inc. -Twin Falls, ID	Classroom curriculum and whole-school approach Social and emotional learning: values, empathy, self-control, social skills, social bonding, self-efficacy, honesty, goal setting	Chicago, Illinois Oregon State University
Promoting Alternative Thinking Strategies -Channing Bete Company -South Deerfield, MA	Classroom curriculum Social and emotional learning: emotional literacy, self-control, social competence, peer relations, interpersonal problem solving	Robbinsdale, Minnesota, & Rochester and Rush-Henrietta, New York. The Children's Institute
The 4Rs Program: Reading, Writing, Respect, and Resolution -Morningside Center for Teaching Social Responsibility -New York, NY	Classroom curriculum Conflict resolution and literacy: social problem solving, anger management, mediation	New York City, New York New York University
Second Step -Committee for Children -Seattle, Washington	Classroom curriculum Violence prevention and social and emotional learning: empathy, anger management, impulse control, and problem solving	Anne Arundel County, Maryland University of Maryland, College Park

Note. Adapted from (SACDRC, 2010)

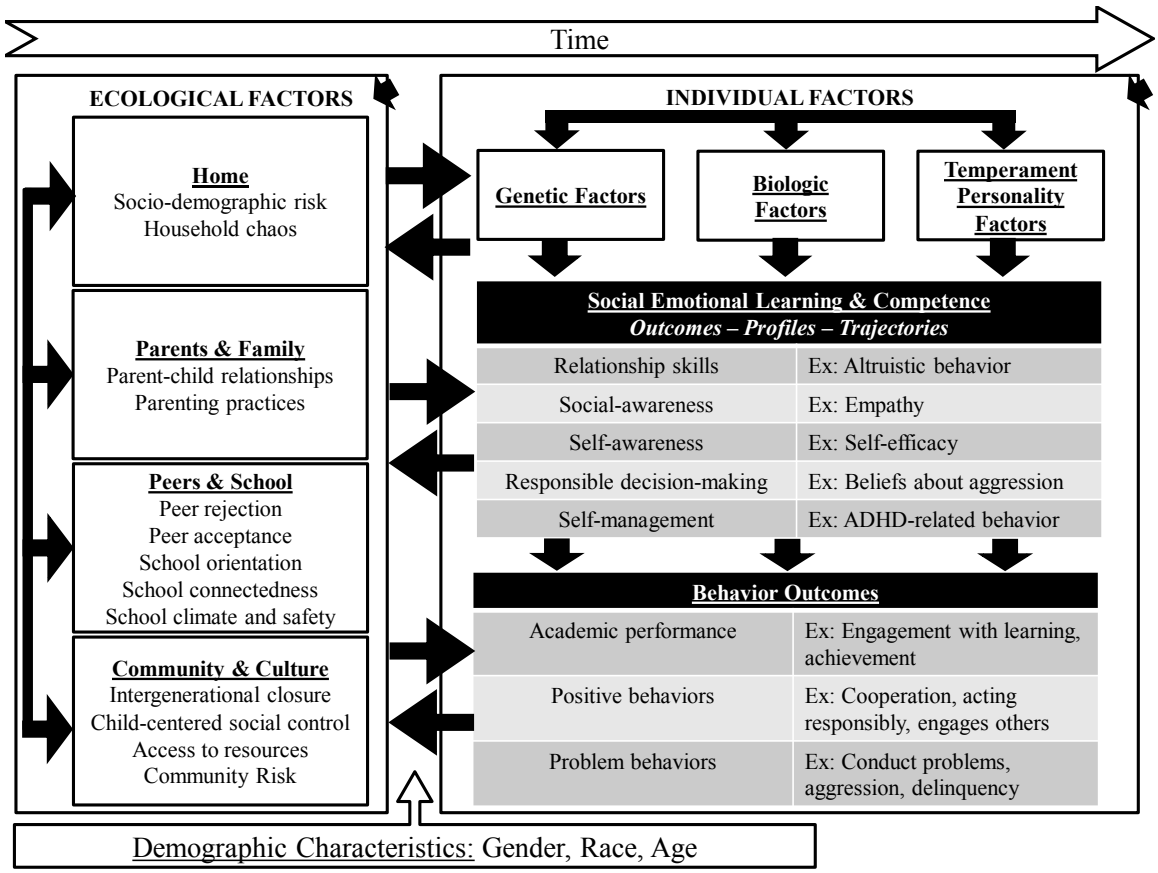

Figure 1. Integrated Transactional-Ecological Social-Emotional Learning Framework

CHAPTER 2.

ECOLOGICAL PREDICTORS OF CHILDREN'S SOCIAL-EMOTIONAL LEARNING: GENDER AND RACE AS MODERATORS

Abstract

Ecological systems theory has highlighted the significant impact of contextual factors on a range of behavior outcomes among youth. Little research, however, has explored their influence on children's social-emotional learning. This longitudinal study examined associations between home, parental, and community characteristics and children's social-emotional learning outcomes, including competence and behavior. The study also investigated the moderating role of gender and race/ethnicity. To address these aims, we analyzed data from the Institute of Education Sciences' Social and Character Development (SACD) program. The sample comprised roughly 3,100 children who were assessed from grades 3 to 5 and served as controls in the SACD Program's multi-site randomized trial. Structural equation modeling showed that home, parental, and community characteristics at grade 3 predicted children's social-emotional competence and behavior at grade 5. Multiple group analyses revealed that gender and race/ethnicity moderated these associations. Specifically, home and community characteristics predicted social-emotional learning among boys, while parenting influenced more outcomes among girls. In addition, home and parental characteristics predicted more outcomes among White children, whereas Black and Hispanic/Latino children's social-emotional learning were influenced more by the community. Using gender and culturally informed approaches, this study identified key contextual characteristics for promoting children's social-emotional learning.

2.1 Introduction

The ecological model (Bronfenbrenner & Morris, 1998) suggests that development over the life course occurs through proximal processes, which involve an individual's interactions with their external environment (e.g., family, school, or community contexts). The ecological model has received wide support from empirical studies demonstrating the impact of contextual factors on children's developmental outcomes (Bronfenbrenner & Morris, 1998; Masten & Coatsworth, 1998). However, less is known about the ecological predictors of children's social-emotional learning outcomes. Prior research has shown that school and peer ecological contexts strongly influence children's social-emotional learning, which may also affect their academic performance and achievement outcomes (Ryan & Shim, 2008; Zins, Bloodworth, Weissberg, & Walberg, 2007). Yet, few studies to date have explored how children's social-emotional learning may be linked to ecological predictors outside of school and peer contexts, such as the home or family (Stright & Yeo, 2014; Zhou et al., 2008). Determining the specific effects of multiple ecological predictors on children's social-emotional learning outcomes, such as competence and behavior, might complement prior research efforts and could help identify crucial targets for prevention and intervention programming.

Home Influences on Social-Emotional Learning

Research has suggests that predictors within a child's home ecological context play an important role in their social, emotional, and behavioral development (Conger et al., 1999; McLeod & Nonnemaker, 2000). Recently, more studies have begun to recognize that the home environment may represent a multidimensional context that is

both social and physical, which could affect youth social-emotional learning through different processes (Evans, 2004). Considering the home's social dimensions, the family stress model suggests that individuals residing in households characterized by high economic pressure during childhood may exhibit greater emotional distress as an adolescent, as well as diminished mastery beliefs such as reduced perceived self-efficacy and control (Ackerman, Brown, & Izard, 2004; Conger, Rueter, & Conger, 2000). Few studies, however, have examined how socio-demographic risk might affect children's social-emotional learning, especially those employing longitudinal assessments (Chen, Matthews, & Boyce, 2002; Zhou et al., 2008). Particularly limited are studies assessing the social-emotional learning outcomes associated with the cumulative risk from residing in a single parent home, living in poverty, and having a caregiver with lower educational attainment among children between middle and late childhood (Bradley & Corwyn, 2002). Furthermore, earlier efforts have focused only on narrow sets of positive or negative outcomes without considering the broader impacts of socio-demographic risk on children's social-emotional competence and behavior.

Few studies to date have considered how physical dimensions of the home environment may affect children's social-emotional learning (Evans, 2006). Specifically, an emerging body of research has sought to identify the role of household chaos in childhood development. Household chaos has been defined by high levels of noise, crowding, and situational traffic patterns in the home (Matheny et al., 1995). Most of the extant literature has addressed the cognitive effects of household chaos on children, while fewer studies have examined social-emotional learning outcomes (Evans et al., 2005; Evans, 2006). Some research suggests that household chaos may increase children's risk

for psychological distress, social withdrawal, poor self-regulation, and problematic behaviors (Deater-Deckard et al., 2009; Evans et al., 2005, Maxwell, 2003). Despite these reports, little research has determined the social, emotional, and behavioral consequences of household chaos prospectively, especially between middle and late childhood (Evans et al., 2005). Furthermore, prior efforts have generally sought to identify the influence of household chaos in conjunction with a limited set of factors from parental or community ecological domains individually (Evans et al., 2005). Thus, research is needed to explore the impact of household chaos on children's social-emotional learning simultaneously with characteristics spanning multiple contexts.

Parental Influences on Social-Emotional Learning

Numerous studies have demonstrated that parenting strongly predicts children's academic, social, emotional, and behavioral outcomes (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). For example, ineffective parenting practices, such as poor monitoring/supervision or psychological control, have been shown to undermine children's social-emotional learning (Grolnick & Pomerantz, 2009; Stattin & Kerr, 2000). This may result in a cascade effect: children with low social-emotional competence may be more likely to be rejected by their classmates, which may lead them to gravitate towards antisocial peer groups. Children associating with antisocial peers might adopt more normative beliefs about aggression and delinquency, further compromising their social-emotional competence and behavior outcomes (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Patterson, DeBaryshe, & Ramsey, 1989; Vuchinich, Bank, & Patterson, 1992). Although research has frequently linked ineffective parenting with children's behavior problems, fewer studies have addressed social-emotional learning outcomes,

with the exception of aggressive beliefs (Pettit et al., 2001; Webster-Stratton, Reid, & Hammond, 2001). In addition, most research has focused on associations between parenting practices and social-emotional learning during early childhood, while comparatively fewer studies have addressed late childhood (Lengua, Honorado, & Bush, 2007; Stright & Yeo, 2014). Thus, our knowledge on how ineffective parenting practices might affect social-emotional learning during late childhood remains poorly understood.

Although the extant literature has focused largely on ineffective parenting and its negative consequences, emerging studies on youth resiliency have galvanized efforts to determine how certain parenting practices may have promotive effects on children's social-emotional learning (Luthar, Cicchetti, & Becker, 2000; Pettit et al., 2001; Rutter, 1999). For instance, positive parenting, characterized by warmth, support, and positive expressivity, may have promotive influences on youth. Indeed, research has shown that positive parenting predicts pro-social outcomes in children (Eisenberg et al., 2005; Sanders, 1999; Bor, Sanders, & Markie-Dadds, 2002). While studies on parenting practices have generally expanded our knowledge of their positive and negative effects, it is important to note that most have examined these types of outcomes separately. However, developmental models on risk and resiliency suggest that various parenting practices might affect different positive or negative social-emotional learning outcomes among children (Cowan, Cowan, & Schulz, 1996). To that end, more studies are needed to determine the array of social-emotional outcomes associated with multiple parenting practices (Prevatt, 2003).

Community Influences on Social-Emotional Learning

Beyond home and parenting contexts, community factors may also influence children's social-emotional learning (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). The community environment is important in understanding social-emotional learning in children because as youth transition from childhood to adolescence, they begin to spend more time away from home and their caregivers (Brody et al., 2001). Thus, the community may begin to play a greater role in shaping children's social-emotional learning. As shown for the home and parental ecological domains, communities may also comprise multiple dimensions. For example, social disorganization theory (Sampson & Groves, 1989) has characterized communities by residential efforts to supervise and control youth (e.g., child-centered social control) or the presence of informal ties between residents (e.g., intergenerational closure). While numerous studies have shown that community disorganization may increase youth risk behaviors, more research is needed to determine how multiple community characteristics might impact specific social-emotional learning outcomes in children (Sampson, Morenoff, & Gannon-Rowley, 2002). In particular, little is known about how community characteristics are associated with pro-social outcomes, such as empathy and altruistic behavior.

Beyond social disorganization theory, institutional models have highlighted the availability of resources as another major characteristic of communities that may have promotive effects on children's social-emotional learning (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). Children who reside in communities with greater resources may have better access to parks, libraries, community centers, and youth programs, which provide them with opportunities to experience enriching activities and interactions that

support social-emotional learning (Chase-Lansdale et al., 1997). In contrast to institutional models, epidemic or contagion models have posited certain risk factors within communities that may undermine children's social-emotional learning (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). According to epidemic and contagion models, those exposed to community risk characteristics such as violence or gangs may be more likely to adopt negative behaviors through social learning (Guerra, Huesmann, & Spindler, 2003; Ingoldsby & Shaw, 2002; Osofsky, 1995). In addition to contagion models, developmental stress models have suggested that community risk may increase psychological distress among children, which may lead to other negative outcomes (Gorman-Smith & Tolan, 1998; Ingoldsby & Shaw, 2002); others may become desensitized to their high-risk community environment (Farrell & Bruce, 1997; Ingoldsby & Shaw, 2002). Taken together, institutional, epidemic, and developmental stress models illustrate how communities may impact children's social-emotional learning both positively and negatively. However, more research is needed to investigate how multiple community characteristics may simultaneously affect children's outcomes.

Gender- and Culturally-Informed Approaches to Social-Emotional Learning

Despite emerging efforts to link home, parental, and community characteristics to children's social-emotional learning, research on the potential moderating role of gender and race/ethnicity in these associations has been sparse (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999; McLeod & Nonnemaker, 2000). Studies suggest that boys and girls may interact with their social environment in contrasting ways. Accordingly, contexts may differentially affect their social-emotional competence and behavior (Conger et al., 1999; Rountree & Warner, 1999). Indeed, prior evaluations of prevention programs that target

school and classroom environments have reported gender differences in intervention outcomes (Ialongo et al., 1999; Kellam et al., 2008). Adopting a gender-informed approach to assess whether home, parental, and community characteristics might also have differential effects on boys' and girls' competence and behavior outcomes may help to inform the development of social-emotional learning programs.

Currently, race/ethnicity differences concerning the influence of home, parental, and community characteristics on children's social-emotional learning remain poorly understood. Differential vulnerability theory has posited that the negative social-emotional consequences of residing in stressful environments may vary by race/ethnicity (Thoits, 1991; Ulbrich, Warheit, & Zimmerman, 1989). Studies have also suggested that children from various racial or ethnic backgrounds may interact with their contexts differently through experiences such as identity-related discrimination. Thus, race/ethnicity may moderate associations between ecological predictors and social-emotional learning outcomes, as children from different racial/ethnic groups may vary in their interactions with and responses to these contexts (McLeod & Nonnemaker, 2000). To date, research on the role of race/ethnicity in associations between contextual factors and social-emotional learning has focused disproportionately on negative outcomes, while fewer studies have addressed positive outcomes (Brody et al., 2006). Determining the moderating role of race/ethnicity on the influence of home, parental, and community characteristics on positive and negative childhood social-emotional learning outcomes will be necessary for targeted intervention efforts.

The Current Study

Guided by the ecological model as well as developmental frameworks concerning home, parental, and community contexts, this study investigated the influence of gender and race/ethnicity on associations between middle childhood home, parental, and community characteristics and late childhood social-emotional learning outcomes. Specifically, the first aim of this study was to examine the extent to which socio-demographic risk, poor parental monitoring/supervision, positive parenting, household chaos, intergenerational closure, child-centered social control, community access to resources, and community risk in grade 3 were associated with altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior among children in grade 5. We hypothesized that home, parental, and community characteristics in middle childhood would significantly predict late childhood social-emotional learning outcomes. The second aim was to determine whether the hypothesized associations varied by children's gender and race/ethnicity (e.g., White, Black, Hispanic/Latino, and Other). We hypothesized that the influence of these predictors would vary differentially according to these characteristics. The current study will inform efforts to enhance children's social-emotional learning, which represent key antecedents to later school success and achievement outcomes (Zins et al., 2007).

2.2 Method

Participants

The data for this study came from the Institute of Education Sciences' Social and Character Development (SACD) Research Program. This multi-site, randomized trial of seven school-based interventions aimed to improve children's social, behavioral, and academic outcomes. Our sample comprised roughly 3,100 children who served as

controls in the trial; approximately 3,400 students assigned to the intervention condition were excluded from the current study due to potential program effects on the social-emotional learning outcomes. Table 1 presents the characteristics of our sample in grade 3, which comprised more girls than boys (51.7% and 48.3%, respectively) and was also racially and ethnically diverse (41.6% White, 31.0% Black, 20.2% Hispanic/Latino, and 7.2% Other). The mean age of the sample was 8.6 years (*SD* = .46).

Procedure

Data were collected from nearly 100 schools comprising two cohorts of students who were assessed between grades 3 and 5. Data from the first cohort were collected over five waves (fall 2004, spring 2005, fall 2005, spring 2006, and spring 2007) and included roughly 2,800 students assigned to control conditions. Data from the second cohort were collected over three waves (fall 2005, spring 2006, and spring 2007) and added nearly 300 control students. Primary caregivers and teachers provided written consent to participate in the study. Approximately 65% of primary caregivers consented to having their child and child's teacher participate in the survey administration. Among those who consented to participate, 94% of the child surveys and 96% of the teacher surveys were completed. Approximately 63% of primary caregivers consented to their own participation in the study, and 92% of these individuals returned completed surveys. The institutional review boards at each participating institution as well as the Public/Private Ventures Institutional Review Board approved the consent process and other procedures concerning human subjects for this study. Ethical guidelines were also followed in the conduct of this research.

Measures

For each wave, a core set of instruments measuring social-emotional outcomes addressed by the SACD Program were administered to the students as well as their teachers and parents using standardized collection procedures. Despite their previously established psychometric properties, the SACD Program sought to develop more valid and optimal scales based on the sample (Kaminski, David-Ferdon, & Battistich, 2009). To that end, the SACD Program derived social-emotional outcome measures using exploratory factor analyses (EFA) of half of the fall 2004 data. They then performed confirmatory factor analyses (CFA) using the other half of the data to ensure that the derived measures were psychometrically robust for students, caregivers, and teachers (Kaminski, David-Ferdon, & Battistich, 2009). The measures were shown to be invariant across demographic and geographic subgroups, and exhibited improved psychometric properties such as greater internal consistency. Moreover, multi-trait multi-respondent analyses showed that similar constructs were correlated across informants and data collection waves (Kaminski, David-Ferdon, & Battistich, 2009). Therefore, the analyses for this study were based on the derived measures, which are described in the subsequent sections.

Social-Emotional Learning Outcomes

Altruistic behavior. Parents completed the 8-item Altruism Scale (primary caregiver version; Solomon, Battistich, Watson, Schaps, & Lewis, 2000). This measure asked primary caregivers to identify on a 4-point scale ranging from "never" to "many times" how often their child engaged in helping behaviors, such as helping someone who was picked on or cheering up someone who was feeling sad ($\alpha = .88$).

Empathy. Students completed the Children's Empathy Questionnaire (Funk, Buchman, Jenks, & Bechtoldt, 2003). The 11-item measure asked students to identify how they would respond to situations that they were likely to encounter on a 3-point scale (e.g., "yes," "sometimes," or "no"). Examples of responses and situations included whether other people's problems would bother them or if they would feel happy when a friend gets a good grade ($\alpha = .78$).

Self-efficacy for peer interaction. Students completed the 12-item Self-Efficacy for Peer Interaction Scale (Wheeler & Ladd, 1982). The measure asked students to rate their ability to navigate conflict and non-conflict peer interactions using verbal or persuasive social skills, which included how hard or easy it would be to engage in play with other children or ask to sit with a group at lunch. Students responded on a 4-point scale ranging from "REALLY EASY!" to "REALLY HARD!" This instrument previously demonstrated excellent test-retest reliability (.90 for boys and .80 for girls; $\alpha = .83$).

Normative beliefs about aggression. Students completed the Normative Beliefs about Aggression Scale (Huesmann & Guerra, 1997). The 8-item measure asked students to indicate on a 4-point scale, ranging from "really wrong" to "perfectly OK," their beliefs about using verbal or physical aggression against others, including how wrong or okay it was to hit, shove, fight with, or verbally assault others ($\alpha = .83$).

ADHD-related behavior. Teachers completed a measure based on criteria outlined by the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 2000) and a shortened version of the IOWA Conners Teacher Rating Scale (Pelham Jr, Milich, Murphy, & Murphy, 1989). The five items

derived from the *DSM-IV* criteria measure have been shown to be the most powerful for predicting diagnoses of attention deficit hyperactivity disorder in school settings (Pelham, Gnagy, Greenslade, & Milich, 1992). The five items derived from the IOWA Conners Teacher Rating Scale assessed students' inattention and over-reactivity. Together, these ten items assessed a student's attention deficits and hyperactivity, such as inattention, distractibility, impulsivity, and organization ($\alpha = .91$).

Home, Parental, and Community Predictor Measures

Socio-demographic risk. Primary caregivers reported whether particular risk factors were present in the child's life at grade 3. This 3-item instrument asked primary caregivers to report whether the child was from a single-parent family, whether the child resided in a low-income household (below 135% of the poverty level), and whether the child's primary caregiver graduated from high school. The sum of these items formed a socio-demographic risk score ranging from 0 to 2, based on the presence of no risk factors, one risk factor, or two or three risk factors. This measure has demonstrated acceptable test-retest reliability (.79).

Household chaos. Primary caregivers completed the Confusion, Hubbub, and Order Scale (CHAOS; Matheny et al., 1995). The instrument comprised 14 items that presented caregivers with statements regarding the degree of environmental "chaos" in the home (e.g., can find things when you need them, there is always a fuss going on, there is a regular routine). Caregivers responded on a 5-point Likert scale whether they agreed or disagreed. This scale has demonstrated acceptable test-retest reliability (.74) and internal consistency ($\alpha = .79$).

Poor monitoring/supervision. Primary caregivers completed the Poor Monitoring and Supervision subscale of the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996). This 10-item instrument asked parents how often they monitored and supervised their child (e.g., checks when the child comes home). Parents reported how frequently they engaged in these behaviors on a 4-point scale ranging from "never" to "almost always" ($\alpha = .75$).

Positive parenting. Primary caregivers completed the Positive Parenting subscale of the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996). The 6-item measure asked parents how often they supported and rewarded their child for particular actions (e.g., hugged or kissed their child when he/she has done something well). Parents reported how frequently they engaged in these behaviors on a 4-point scale ranging from "never" to "almost always" ($\alpha = .85$).

Intergenerational closure. Primary caregivers completed the Intergenerational Closure Scale (Sampson, Morenoff, & Earls, 1999). The 3-item measure presented caregivers with statements concerning the connections between adults and children in their community (e.g., parents in the neighborhood know their children's friends, adults in the neighborhood know who the local children are, parents can count on adults in the neighborhood to watch that children are safe). Caregivers reported the applicability of the statement to their community on a 4-point scale ranging from "not at all" to "a lot" ($\alpha = .72$).

Child-centered social control. Primary caregivers completed The Child-Centered Social Control Scale (Sampson, Morenoff, & Earls, 1999). The 5-item measure presented caregivers with statements about whether members of their community would

respond to neighborhood issues (e.g., when children were skipping school or showing disrespect to an adult). Caregivers reported the likelihood that neighbors would "do something" on a 5-point scale ranging from "very unlikely" to "very likely" ($\alpha = .87$).

Community access to resources. Primary caregivers completed a measure that was developed by the SACD Program to assess community access to resources. The items were based on prior research concerning community risk and protective factors (Forehand et al., 2000). The 5-item measure presented caregivers with statements that described the availability of resources (e.g., libraries, safe parks, health centers) in their neighborhood. Caregivers reported the extent to which the statements described their neighborhood on a 4-point scale ranging from "not at all" to "a lot" ($\alpha = .78$).

Community risk. Primary caregivers completed a measure that was developed by the SACD Program to assess community risk. The items were based on prior research concerning community risk and protective factors (Forehand et al., 2000). The 7-item measure presented caregivers with statements that described their neighborhood as being dangerous or in poor condition (e.g., presence of litter, violence, or drug dealing). Caregivers reported the extent to which the statements described their neighborhood on a 4-point scale ranging from "not at all" to "a lot" ($\alpha = .90$).

Covariates

Students indicated their gender on questionnaires during each data collection ("boy" or "girl"). Primary caregivers also reported their child's race/ethnicity on questionnaires during each data collection (White; Black or African American; Hispanic or Latino; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; Other). The race/ethnicity variables were combined to form the following

categories: White (non-Hispanic/Latino), Black (non-Hispanic/Latino), Hispanic/Latino, and Other.

Data Analysis

To ensure that associations could not be attributed to intervention effects, we restricted our analyses to students assigned to control conditions in the SACD Research Program. We used Stata version 11 (StataCorp, 2009) to perform descriptive analyses. We computed bivariate correlations to detect multicollinearity between our measures and conducted univariate analyses of variance (ANOVAs) with multiple comparison tests to explore whether mean scores for the predictor and outcome measures differed between gender and race/ethnicity groups. We then used Mplus version 5 (Muthén & Muthén, 2007) to construct models and examine the hypothesized associations. The path analyses were conducted in a structural equation modeling (SEM) framework, which allows for multiple associations to be estimated simultaneously. We used the MLR estimator to obtain maximum likelihood parameter estimates. MLR standard errors were computed using the sandwich estimator, which is robust to non-normality of observations. It also utilizes full information maximum likelihood methods to handle data that are missing at random (Yuan & Bentler, 2000).

To evaluate the fit of our models, we used the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) values, and standardized root mean square residual (SRMR) values (Hu & Bentler, 1999). Models with CFI and TLI values greater than .90 were defined as having "acceptable" fit, while those with values greater than .95 were defined as having "excellent" fit. Models with RMSEA values less than .08 were defined as having "reasonable" fit, while those

with values less than .05 were defined as having "very good" fit. Models with SRMR values less than .08 were defined as having "close" fit, and values less than .05 were defined as having "very close" fit. We reported the chi-square goodness-of-fit statistic for all models, but did not use these values to assess model fit due to their sensitivity to sample size (Hu & Bentler, 1999).

To address our first aim, we fit a structural model using the full sample to assess the extent to which home, parental, and community characteristics in grade 3 predicted social-emotional learning outcomes in grade 5. To address our second aim, we used multiple group analyses to determine whether our hypothesized associations varied by gender and race/ethnicity. The multiple group analyses involved several steps (Bollen, 1989). First, we examined the fit of an unrestricted model where structural parameters were freely estimated across comparison groups (e.g., Males/Females and Whites/Blacks/Hispanics/Other). Second, we examined the fit of a restricted model where structural parameters were constrained to be equal across comparison groups. Third, we compared the fit of the models using chi-square difference tests. This involved subtracting the chi-square value and degrees of freedom of the unrestricted model from the chi-square value and degrees of freedom of the restricted model to obtain a chi-square difference value. Significant chi-square difference values indicated that constraining the model parameters to be equal across comparison groups in the restricted model significantly worsened the fit of the model (Muthén & Muthén, 2007); significant results therefore favored the unrestricted models and provided evidence of effect modification.

2.3 Results

Descriptive Statistics

Table 1 reports correlations between the study variables. The correlation matrix did not suggest concerns regarding multicollinearity among the predictor measures given the absence of highly correlated variables (Bollen, 1989). The mean scores obtained from the univariate ANOVAs are shown in Table 2. At grades 3 and 5, empathy and altruistic behavior were higher among girls compared to boys. Meanwhile, normative beliefs about aggression, self-efficacy for peer interaction and ADHD-related behavior were higher among boys compared to girls. Similarly, mean scores on the predictor and outcome measures significantly differed between race/ethnicity groups.

Full Sample Structural Model: Predictors of Social-Emotional Learning

Consistent with our first hypothesis, the full sample structural model showed that home, parental, and community characteristics of children in grade 3 predicted their social-emotional competence and behavior in grade 5. The model also provided an excellent fit for the data ($\chi^2 = 54.235$, df = 20, CFI = .982, TLI = .915, RMSEA = .023, SRMR = .011). Table 3 presents the associations between the home, parental, and community predictors and social-emotional learning outcomes. We summarize our five social-emotional learning outcomes and their ecological predictors in this section.

Several home, parental, and community characteristics at grade 3 predicted altruistic behavior and self-efficacy for peer interaction at grade 5. Specifically, grade 3 socio-demographic risk ($\beta = .08$) and positive parenting ($\beta = .06$) were weakly associated with increased altruistic behavior. Community risk was also positively associated with altruistic behavior ($\beta = .13$). Meanwhile, socio-demographic risk ($\beta = -.07$), positive parenting ($\beta = -.06$), and child-centered social control ($\beta = -.08$) had adverse effects on children's self-efficacy for peer interaction at grade 5. Intergenerational closure, on the

other hand, was positively associated with self-efficacy for peer interaction (β = .09). Unlike altruistic behavior and self-efficacy for peer interaction, there were no significant associations between any ecological predictor at grade 3 and empathy at grade 5 in the full sample model.

Parental and community characteristics at grade 3 predicted normative beliefs about aggression at grade 5. Poor monitoring/supervision appeared to be a risk factor for children such that it increased their risk for having normative beliefs about aggression in grade 5 (β = .06). In contrast, child-centered social control seemed to have promotive effects for children by decreasing their normative beliefs about aggression at grade 5 (β = -.09). ADHD-related behavior at grade 5 was significantly associated only with socio-demographic risk (β = .05) in the full sample, which adversely affected children.

Multiple Group Analysis: Moderation by Gender

We compared the fit of our unrestricted model (χ^2 = 64.749, *df* = 40, CFI = .985, TLI = .932, RMSEA = .020, SRMR = .012) to the fit of our restricted model (χ^2 = 172.054, *df* = 100, CFI = .954, TLI = .917, RMSEA = .022, SRMR = .022). The chi-square difference test showed that the restricted model significantly worsened the fit of the model (χ^2 = 107.305, *df* = 60, $p < .001$), favoring the unrestricted model. Thus, consistent with our second hypothesis, associations between ecological predictors at grade 3 and social-emotional learning outcomes at grade 5 differed between boys and girls. Table 4 presents the associations between home, parental, and community predictors and the social-emotional learning outcomes by gender.

Between boys and girls, home, parental, and community characteristics at grade 3 were differentially associated with altruistic behavior and self-efficacy for peer

interaction at grade 5. Both socio-demographic risk (β = .08) and community risk (β = .15) were associated with greater levels of altruistic behavior among boys. Among girls, positive parenting (β = .08) predicted altruistic behavior. With regard to self-efficacy for peer interaction, intergenerational closure (β = .11) and child-centered social control (β = -.12) were significant predictors for boys. However, whereas intergenerational closure promoted self-efficacy for peer interaction in boys, child-centered social control had adverse effects. Among girls, socio-demographic risk (β = -.10) as well as positive parenting (β = -.08) undermined their self-efficacy for peer interaction, although the associations were relatively small. Similar to the findings from our full sample model, ecological characteristics at grade 3 were not associated with empathy at grade 5 for boys. Among girls, however, positive parenting (β = .10) predicted empathy at grade 5.

Home, parental, and community characteristics at grade 3 were differentially associated with normative beliefs about aggression at grade 5 for boys and girls. Socio-demographic risk (β = .09) and poor monitoring/supervision (β = .07) led to greater normative beliefs about aggression among boys, while community access to resources (β = -.07) decreased their normative beliefs about aggression. Among girls, child-centered social control (β = -.14) decreased normative beliefs about aggression. With regard to ADHD-related behavior, socio-demographic risk (β = .13) and intergenerational closure (β = -.09) were significant predictors for boys, but yielded opposite influences. Socio-demographic risk adversely affected boys, while intergenerational closure decreased ADHD-related behavior. Among girls, both household chaos (β = .07) and community risk (β = .08) were positively associated with ADHD-related behavior, but these associations were weak. Overall, the results showed that positive parenting may promote

and undermine girls' social-emotional learning outcomes. Among boys, however, social-emotional learning was largely predicted by community characteristics, which had both positive and negative influences.

Multiple Group Analysis: Moderation by Race

We compared the fit of our unrestricted model (χ^2 = 111.723, *df* = 80, CFI = .980, TLI = .921, RMSEA = .024, SRMR = .018) to the fit of our restricted model (χ^2 = 330.216, *df* = 230, CFI = .938, TLI = .913, RMSEA = .022, SRMR = .022). The chi-square difference test showed that the restricted model significantly worsened the fit of the model (χ^2 = 218.493, *df* = 150, $p < .001$). Thus, ecological characteristics at grade 3 were differentially associated with social-emotional learning at grade 5 by race/ethnicity, which was consistent with our second hypothesis (Table 5).

Home, parental, and community characteristics at grade 3 differentially predicted altruistic behavior and self-efficacy for peer interaction at grade 5 by race/ethnicity. Positive parenting (β = .11) and child-centered social control (β = .13) increased altruistic behavior among White children. Meanwhile, community risk was positively associated with altruistic behavior among both Black (β = .16) and Hispanic/Latino children (β = .16). With regard to self-efficacy for peer interaction, socio-demographic risk (β = -.10) negatively affected White children. Meanwhile, intergenerational closure increased self-efficacy for peer interaction among both Black (β = .15) and Hispanic/Latino children (β = .15). For Hispanic/Latino children, however, child-centered social control decreased self-efficacy for peer interaction (β = -.15). Grade 3 ecological predictors generally did not predict grade 5 empathy except among Hispanic/Latino children, for which positive parenting (β = .14) was positively associated with empathy.

Home, parental, and community characteristics at grade 3 were differentially associated with normative beliefs about aggression and ADHD-related behavior at grade 5 according to race/ethnicity. Among Black children, poor monitoring/supervision (β = .12) increased their normative beliefs about aggression. Among Hispanic/Latino children, community access to resources (β = -.13) decreased normative beliefs about aggression. With regard to ADHD-related behavior among White children, poor monitoring/supervision (β = .07) and intergenerational closure (β = -.09) were weakly associated, but yielded opposite influences. In contrast to White children, poor monitoring/supervision (β = -.14) decreased ADHD-related behavior among Hispanic/Latino children. Among Black children, positive parenting (β = -.10) decreased ADHD-related behavior while child-centered social control (β = .19) increased this outcome. Thus, community factors were crucial predictors of social-emotional learning across groups.

2.4 Discussion

Guided by the ecological model (Bronfenbrenner & Morris, 1998) and theoretical frameworks spanning multiple contexts, this study advances the educational psychology literature by examining the influence of middle childhood home, parental, and community characteristics on late childhood social-emotional learning outcomes. To account for the complex nature of these associations, we also explored the moderating role of gender and race/ethnicity. As prior research has focused largely on school and peer influences (Ryan & Shim, 2008), we sought to extend these important endeavors by investigating the role of home, parental, and community characteristics. These included socio-demographic risk, household chaos, parental monitoring and supervision, positive

parenting, intergenerational closure, child-centered social control, community access to resources, and community risk. Our late childhood social-emotional learning outcomes comprised altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. Prior research has suggested that these social-emotional learning outcomes represent key antecedents of students' school success and achievement (Zins et al., 2007). Consistent with our first hypothesis, we found that middle childhood home, parental, and community characteristics predicted late childhood social-emotional learning outcomes. In support of our second hypothesis, we identified differential associations between our predictors and outcomes across gender and race/ethnicity groups.

Ecological Predictors of Social-Emotional Learning

Socio-demographic risk generally influenced children's social-emotional learning negatively. For example, socio-demographic risk decreased their self-efficacy for peer interaction and increased their normative beliefs about aggression and ADHD-related behavior. Earlier research has reported similar findings (Bradley & Corwyn, 2002). Contrary to our expectations, however, socio-demographic risk was associated with greater levels of altruistic behavior among some children. Earlier studies examining associations between socio-demographic risk factors and children's behaviors have typically reported negative outcomes among those from more disadvantaged backgrounds (Benenson, Pascoe, & Radmore, 2007; Henrich et al., 2005; Malti, Gummerum, Keller, & Buchmann, 2009). Our findings, however, were in line with more recent studies suggesting that altruistic behavior may be more common among individuals from socioeconomically disadvantaged backgrounds (Piff et al., 2010). Our results may be due

to our socio-demographic risk measure having an indicator of household socioeconomic status. Thus, it is possible that children residing in homes with greater socio-demographic risk might be adapting to their environment through depending on others to achieve life goals. To that end, they may become more behaviorally oriented toward others and might learn to better recognize others' needs as well (Kraus & Keltner, 2009; Kraus, Piff, & Keltner, 2009).

While studies have widely shown that parenting plays a central role in affecting children's developmental outcomes, much of the extant research has focused on aggression, sexual behavior, or substance abuse (Borawski, Levers-Landis, Lovegreen, & Trapl, 2003; Griffin et al., 2000). Our findings, however, highlight the importance of parenting with regard to children's social-emotional learning. For example, poor monitoring and supervision during middle childhood predicted greater normative beliefs about aggression in late childhood. Positive parenting in middle childhood, on the other hand, exerted promotive influences on many social-emotional learning outcomes. For instance, positive parenting predicted altruistic behavior in late childhood, which has been demonstrated in previous research (Carlo et al., 2007). Thus, encouraging parents to utilize positive parenting may increase pro-social behaviors in children and improve their academic engagement in schools (Juvonen, Nishina, & Graham, 2000).

While most studies have shown positive parenting to have a promotive influence on children's social-emotional learning, others have reported that similar, conventionally beneficial, parenting styles and practices may negatively affect children (McDowell & Parke, 2009; McKee et al., 2008; Rakow et al., 2009). Although our results showed that positive parenting was found to generally improve children's social-emotional learning, it

also had a negative influence on their self-efficacy for peer interaction, which is in line with prior research (Baumeister, Hutton, & Cairns, 1990; Henderlong & Lepper, 2002). It is therefore important for parents and families to note the potential impact that positive parenting may have on youth. Some research has suggested that praise can promote self-consciousness and reduce autonomy in children (Henderlong & Lepper, 2002). Thus, studies have recommended using praise on children only when it is sincere, and that their accomplishments be attributed to effort. Avoiding praise that incorporates making comparisons to others is also an important consideration. Such forms of praise can undermine competence and motivation in children (Henderlong & Lepper, 2002). As comparisons to others become more common across middle and late childhood, and that this transition has typically been characterized by continually shifting perceptions of self-concept or self-efficacy, positive parenting may need to be exercised cautiously in light of its potential influence on social-emotional learning among youth (Cole et al., 2001).

To date, few studies have examined the effects of multiple community characteristics on children's social-emotional learning. Consistent with our first hypothesis, neighborhood intergenerational closure in middle childhood predicted social-emotional learning outcomes in late childhood. For example, intergenerational closure was associated with self-efficacy for peer interaction, which has been shown in earlier research (Fletcher, Hunter, & Eanes, 2006). These findings highlight the importance of maintaining social ties between adults and children within communities, as these relationships help youth cultivate important skills for socializing with their peers. We also found that child-centered social control was associated with several social-emotional outcomes in late childhood. For instance, it decreased normative beliefs about aggression

and increased self-efficacy for peer interaction for most children. These findings are consistent with prior research showing that benefits of collective efficacy in children's development (Sampson, Raudenbush, & Earls, 1997). They also suggest that the willingness of neighbors to intervene in juvenile delinquency may help yield better social-emotional learning outcomes in children residing in the community.

According to social disorganization theory and developmental stress models, we expected that youth residing in high-risk communities would be more likely to participate in maladaptive behaviors and less likely to engage in pro-social behaviors. To the contrary, however, community risk was associated with greater levels of altruistic behavior in some children. Recent studies examining how social class and risk might shape individuals' social-cognition and behavior may help explain our findings (Kraus et al., 2012). While research has documented many adverse social-emotional consequences of residing in high risk community contexts, these environments may also foster more communal self-concepts, empathy, compassion, and pro-social behavior among youth (Kraus, Côté, & Keltner, 2010; Kraus et al., 2012; Piff et al., 2010). However, more research is needed to understand the social-cognitive processes linking these factors. With regard to prevention programming, our findings support efforts to involve teen mentors from at-risk community settings in children's social-emotional learning programs. Encouraging youth from disadvantaged backgrounds to work together may improve their competence and behavior (O'Donnell, Michalak, & Ames, 1996).

Gender Differences in Ecological Predictors of Social-Emotional Learning

We observed differential associations between ecological predictors and social-emotional learning outcomes by gender in this study. For example, socio-demographic

risk increased ADHD-related behavior among boys but not girls, and decreased self-efficacy for peer interaction among girls but not boys. We also found that the effects of household chaos varied by gender. Specifically, its influence was limited to girls, for which middle childhood household chaos predicted late childhood ADHD-related behavior. The gender differences in this association suggest that boys and girls may respond differently to home environments, which has been supported by earlier research addressing family stress processes (Conger et al., 1993). More studies are needed to investigate the mechanisms linking household chaos to social-emotional learning outcomes such as ADHD-related behavior by gender. Prior research has suggested that parenting may explain the effects of household chaos on children's behavior, but more studies are needed to confirm these potential mediating processes for boys and girls separately (Coldwell, Pike, & Dunn, 2006).

Among girls, positive parenting influenced the greatest number of social-emotional learning outcomes. This highlights the importance of parenting in the development of social-emotional learning among girls. While most studies have identified significant gender differences in the impact of parenting on behavior problems, our study instead illustrated its important role in social-emotional learning for girls (Deater-Deckard et al., 1998; Griffin et al., 2000). Furthermore, among the home, parental, and community characteristics included in the study, positive parenting was the only predictor associated with empathy. This relationship was particularly strong for girls and Hispanic/Latino children. Our findings suggest that parenting represents an important target for intervention programs aiming to promote empathy among youth, which has

been shown to predict student achievement (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Strayer & Roberts, 2004).

The influence of community characteristics varied widely by gender. For example, intergenerational closure increased self-efficacy for peer interaction and reduced ADHD-related behavior among boys but not girls. Despite these significant associations, we note that prior research has not reported similar effects for intergenerational closure, potentially due to smaller samples (Gibson, Sullivan, Jones, & Piquero, 2010). While more research is needed to corroborate these results, our findings clearly suggest that children's relationships with adults in the community play a key role in their social-emotional learning, potentially through modeling self-management skills or collective efficacy. We also found that community access to resources (e.g., parks) decreased normative beliefs about aggression among boys. Access to outdoor play may improve social-emotional learning among boys by affording them opportunities to interact with larger, more heterogeneous, groups of peers, which allows them develop the social skills necessary to resolve conflicts (Blatchford, Baines, & Pellegrini, 2003; Pellegrini & Smith, 1993). Among girls, child-centered social control had the strongest influence on social-emotional learning in this study. For example, it significantly reduced normative beliefs about aggression. Overall, community characteristics did not affect children's social-emotional learning equally between boys and girls. Yet, our findings suggest that community characteristics may be important targets in efforts to enhance children's social-emotional learning. The psychological processes that might explain how community characteristics influence boys' and girls' social-emotional learning differentially, however, remain to be explored (Rountree & Warner, 1999).

Race/Ethnicity Differences in Ecological Predictors of Social-Emotional Learning

We found that associations between ecological predictors and children's social-emotional learning outcomes varied by race/ethnicity. Among White children, for instance, socio-demographic risk was associated with normative beliefs about aggression and self-efficacy for peer interaction. However, we did not observe these associations in other race/ethnicity groups. These results confirm earlier research showing that family economic pressure may impact youth adjustment, although these results were more meaningful for certain racial/ethnic groups in our sample. Studies have suggested that the impact of socio-demographic risk may be explained by differences in children's cognitive development or academic achievement (Conger et al., 2002; Evans & Kantrowitz, 2002; Sirin, 2005). However, more research is needed to assess these potential mechanisms linking socio-demographic risk to children's social-emotional learning outcomes. Meanwhile, in studying parental monitoring and supervision as well as positive parenting, our study extends prior research efforts by also determining the role of race/ethnicity in the parental socialization of children's developmental outcomes, including aggressive behavior and self-control (Pratt, Turner, & Piquero, 2004; Zhou et al., 2008). Namely, we found that the effect of poor monitoring and supervision on normative beliefs about aggression was particularly strong for Black children. Thus, our findings suggest that improving parental monitoring and supervision will be crucial for supporting social-emotional learning among urban minority youth, which may help reduce antisocial outcomes such as violence and delinquency (Li, Feigelman, & Stanton, 2000; Li et al., 2002).

Across race/ethnicity groups, community characteristics influenced a broad array of social-emotional learning outcomes. For example, we found that the promotive influence of intergenerational closure was particularly strong among Black and Hispanic/Latino children. In addition, despite its conventionally protective nature, child-centered social control adversely affected social-emotional learning for some children. For example, child-centered social control was associated with decreased self-efficacy for peer interaction among Hispanic/Latino children and increased ADHD-related behavior among Black children. In line with these findings, some studies have suggested that perceived control could negatively affect children's adjustment (Kerr & Stattin, 2000; Pettit et al., 2001). However, more research is needed to determine the mechanisms linking child-centered social control in communities to later social-emotional learning outcomes for youth from different racial/ethnic backgrounds, especially in light of its promotive effects for White children with regard to altruistic behavior. In contrast to child-centered social control, we found that community access to resources bolstered social-emotional learning for children across certain race/ethnicity groups. Namely, it was associated with significantly lower levels of normative beliefs about aggression among Hispanic/Latino children. These findings highlight the importance of being able to access institutional resources (e.g., health and community centers or programs) for Hispanic/Latino youth. Indeed, earlier research has shown that Hispanic/Latino children exhibited more positive social-emotional learning outcomes when enrolled in preschool centers compared to those from other race/ethnicity groups (Loeb et al., 2007). Our study expanded these findings by demonstrating the social-emotional benefits for youth having access to such resources in their community.

Limitations

There are several limitations to this study worth noting. First, this study assessed outcomes only between grades 3 and 5, which might not fully capture social-emotional learning across childhood. Nevertheless, youth social-emotional learning between middle and late childhood represents a crucial transitional period for which there has been little research. Future studies should investigate the influence of home, parental, and community characteristics on children's social-emotional learning over multiple developmental periods to track changes in these associations over time. Second, this study evaluated home, parental, and community characteristics for youth only at a single time point. Therefore, we were not able to link changes in these ecological contexts to social-emotional competence and behavior outcomes. Third, the measures for some of our social-emotional learning outcomes and parental characteristics were based on self-report, which may lead to social desirability bias. Fourth, assessments of community characteristics were based on how caregivers perceived their neighborhood environment. It is not clear whether youth perceived their environments similarly to their caregivers. Utilizing multiple sources of information and methods may be useful in comprehensively measuring parental and community characteristics in future research. Finally, the observational design of this study precludes conclusions regarding causal associations or mechanisms.

2.5 Conclusion

Our findings furthered the empirical literature in educational psychology by documenting the specific impacts of home, parental, and community characteristics in middle childhood on social-emotional learning outcomes in late childhood. We also

determined that these associations varied by gender and race or ethnicity. Socio-demographic and community risks, as well as positive parenting, were important predictors of altruistic behavior. Meanwhile, self-efficacy for peer interaction was influenced by several contextual characteristics, including socio-demographic risk, positive parenting, intergenerational closure, and child-centered social control. Certain home, parental, and community characteristics may also predict negative social-emotional competence and behavior outcomes. For example, socio-demographic risk was associated with greater ADHD-related behavior in late childhood. Meanwhile, poor monitoring and supervision were associated with normative beliefs about aggression. This study suggests that addressing particular home, parental, and community characteristics during middle childhood through intervention programming may be a promising strategy for promoting social-emotional competence, increasing pro-social behaviors, and reducing problem behaviors among youth during late childhood. Targeted efforts that address children's social-emotional learning across multiple contexts, including not only their school but also their home, family, and community, will be crucial to ensuring their educational success during this pivotal developmental period.

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Table 1

Correlations between Study Variables

	1.	2.	3.	4.	5.	6..	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. SDR (G3-PR)	–																	
2. CHAOS (G3-PR)	.10***	–																
3. MON (G3-PR)	.20***	.18***	–															
4. POSP (G3-PR)	.01	-.23***	-.16***	–														
5. IGC (G3-PR)	-.32***	-.15***	-.10***	.11***	–													

(continued)

(continued)

	1.	2.	3.	4.	5.	6..	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
6. CCSC (G3-PR)	-.32***	-.16***	-.12***	.13***	.63***	–												
7. RESC (G3-PR)	-.15***	-.13***	-.12***	.05**	.31***	.28***	–											
8. COMM (G3-PR)	.41***	.10***	.15***	-.03	-.45***	-.58***	-.10***	–										
9. ALT (G3-PR)	.20***	-.08***	.12***	.17***	.01	-.04*	.01	.19***	–									
10. EMP (G3-CR)	-.07**	.00	-.04*	.03	.06**	.10***	.05*	-.11***	.04*	–								

(continued)

(continued)

	1.	2.	3.	4.	5.	6..	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
11. EFF (G3-CR)	-.05*	-.03	-.06**	.07***	.07***	.06**	.08***	-.02	.02	-.01	–							
12. NORM (G3-CR)	.07***	.04*	.09***	-.03	-.07***	-.10***	-.05**	.14***	.01	-.32***	-.07***	–						
13. ADHD (G3-TR)	.14***	.09***	.13***	-.01	-.09***	-.10***	-.06***	.21***	.05**	-.11***	.05**	.17***	–					
14. ALT (G5-PR)	.25***	-.04	.11***	.16***	-.09**	-.13*	-.06*	.25***	.43***	-.03	-.03	.05*	.08**	–				
15. EMP (G5-CR)	-.13***	-.03	-.05*	.02	.16***	.19***	.09***	-.19***	.00	.24***	-.06*	-.09***	-.12***	.05	–			

(continued)

(continued)

	1.	2.	3.	4.	5.	6..	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
16. EFF (G5-CR)	-.08**	-.03	-.05*	-.02	.07**	.01	.02	-.03	-.04	-.01	.26***	-.08***	-.02	-.09**	-.16***	–		
17. NORM (G5-CR)	.15***	.01	.12***	-.01	-.15***	-.20***	-.10***	.17***	.00	-.15***	.03	.14***	.14***	.00	-.47***	.08***	–	
18. ADHD (G5-TR)	.12***	.04	.09***	-.03	-.09***	-.07**	-.04	.16***	.05*	-.10***	.00	.10***	.46***	.05	-.15***	.02	.13***	–

Note. SDR = socio-demographic risk; CHAOS = household chaos; MON = poor monitoring/supervision; POSP = positive parenting; IGC = intergenerational closure; CCSC = child-centered social control; RESC = community access to resources; COMM = community risk; ALT = altruistic behavior; EMP = empathy; EFF = self-efficacy for peer interaction; NORM = normative beliefs about aggression; ADHD = ADHD-related behavior; G3 = grade 3; G5 = grade 5; CR = child report; TR = teacher report; PR = parent report.

*$p < .05$ **$p < .01$ ***$p < .001$

Table 2

Descriptive Statistics of Home, Parental, and Community Predictors and Social-Emotional Learning Outcomes by Gender and Race

	Full Sample		Males		Females		Whites		Blacks		Hispanics/Latinos		Other	
	N	*%* or *M* (SD)	*N*	*%* or *M* (SD)	*N*	*%* or *M* (SD)	*N*	*%* or *M* (SD)	*N*	*%* or *M* (SD)	*N*	*%* or *M* (SD)	*N*	*%* or *M* (SD)
Gender														
Male	1490	48.4%	-	-	-	-	580	49.5%	400	46.1%	280	50.0%	90	45.5%
Female	1600	51.6%	-	-	-	-	600	50.5%	470	53.9%	280	50.0%	110	54.5%
Race														
White	1180	41.6%	580	42.9%	600	40.7%	-	-	-	-	-	-	-	-
Black	880	31.0%	400	29.5%	470	32.3%	-	-	-	-	-	-	-	-
Hispanic	570	20.2%	280	20.9%	280	19.5%	-	-	-	-	-	-	-	-
Other	200	7.2%	90	6.7%	110	7.5%	-	-	-	-	-	-	-	-

(continued)

(continued)

	Full Sample		Males		Females		Whites		Blacks		Hispanics/Latinos		Other	
	N	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)
Socio-demographic risk (G3)	2760	.63 (.71)	1320	.61 (.70)	1420	.65 (.72)	1170	.29 (.55)	850	$.82_{b}$ (.65)	540	$1.05_{b,c}$ (.76)	200	$.72_{b,c,d}$ (.73)
Household chaos (G3)	3120	2.19 (.42)	1490	2.18 (.43)	1590	2.19 (.41)	1180	2.22 (.47)	880	2.11_{b} (.41)	570	2.25_{c} (.40)	200	2.20 (.41)
Poor monitoring/ supervision (G3)	3120	1.16 (.18)	1490	1.17 (.18)	1590	1.14_{a} (.18)	1180	1.12 (.15)	880	1.17_{b} (.20)	570	$1.21_{b,c}$ (.21)	200	$1.16_{b,d}$ (.16)
Positive parenting (G3)	3120	3.53 (.37)	1490	3.53 (.38)	1590	3.53 (.37)	1180	3.52 (.39)	880	3.57_{b} (.38)	570	3.51_{c} (.39)	200	3.53 (.38)

(continued)

(continued)

	Full Sample		Males		Females		Whites		Blacks		Hispanics/Latinos		Other	
	N	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)
Intergenerational closure (G3)	3120	3.08 (.66)	1490	3.11 (.64)	1590	3.06_{a} (.67)	1180	3.37 (.63)	880	3.00_{b} (.60)	570	$2.73_{b,c}$ (.65)	200	$2.94_{b,d}$ (.71)
Child-centered social control (G3)	3120	4.06 (.73)	1490	4.11 (.71)	1590	4.02_{a} (.76)	1180	4.40 (.61)	880	3.85_{b} (.74)	570	3.85_{b} (.76)	200	3.88_{b} (.92)
Community access to resources (G3)	3120	2.69 (.70)	1490	2.69 (.71)	1590	2.69 (.70)	1180	2.76 (.82)	880	2.70 (.63)	570	$2.55_{b,c}$ (.64)	200	2.71_{d} (.71)
Community risk (G3)	3120	1.55 (.63)	1490	1.54 (.64)	1590	1.55 (.62)	1180	1.22 (.43)	880	1.81_{b} (.70)	570	$1.72_{b,c}$ (.62)	200	$1.58_{b,c,d}$ (.68)

(continued)

(continued)

	Full Sample		Males		Females		Whites		Blacks		Hispanics/Latinos		Other	
	N	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)
Altruistic behavior (G3)	3120	2.30 (.60)	1490	2.24 (.60)	1590	2.35_{a} (.61)	1180	2.16 (.62)	880	2.48_{b} (.62)	570	$2.28_{b,c}$ (.61)	200	$2.30_{b,c}$ (.60)
Empathy (G3)	3120	2.41 (.34)	1490	2.35 (.36)	1590	2.46_{a} (.32)	1180	2.45 (.32)	880	2.36_{b} (.37)	570	2.44_{c} (.33)	200	2.39 (.34)
Self-efficacy for peer interaction (G3)	3120	2.94 (.54)	1490	3.00 (.56)	1590	2.89_{a} (.54)	1180	2.98 (.53)	880	2.95 (.56)	570	$2.87_{b,c}$ (.56)	200	2.89 (.62)
Normative beliefs about aggression (G3)	3120	1.24 (.38)	1490	1.30 (.44)	1590	1.19_{a} (.32)	1180	1.20 (.33)	880	1.29_{b} (.45)	570	1.23_{c} (.37)	200	1.24 (.39)
ADHD-related behavior (G3)	3120	1.71 (.55)	1490	1.87 (.58)	1590	1.56_{a} (.47)	1180	1.62 (.56)	880	1.83_{b} (.56)	570	$1.71_{b,c}$ (.48)	200	1.61_{c} (.51)

(continued)

(continued)

	Full Sample		Males		Females		Whites		Blacks		Hispanics/Latinos		Other	
	N	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)	*N*	% or *M* (SD)
Altruistic behavior (G5)	1360	2.22 (.72)	650	2.17 (.72)	700	2.26_{a} (.71)	660	2.01 (.60)	340	2.50_{b} (.77)	270	$2.29_{b,c}$ (.71)	90	2.42_{b} (.83)
Empathy (G5)	1900	2.10 (.46)	910	2.01 (.47)	980	2.19_{a} (.43)	800	2.21 (.42)	470	1.98_{b} (.48)	360	2.03_{b} (.46)	120	2.14_{c} (.46)
Self-efficacy for peer interaction (G5)	1900	3.26 (.63)	910	3.33 (.62)	980	3.20_{a} (.62)	800	3.29 (.61)	470	3.35 (.61)	360	$3.16_{b,c}$ (.66)	120	3.19 (.63)
Normative beliefs about aggression (G5)	1900	1.45 (.65)	910	1.55 (.73)	990	1.35_{a} (.56)	800	1.30 (.53)	470	1.61_{b} (.72)	360	1.53_{b} (.70)	120	1.48_{b} (.73)
ADHD-related behavior (G5)	1960	1.67 (.64)	940	1.86 (.69)	1000	1.48_{a} (.52)	820	1.58 (.62)	490	1.81_{b} (.67)	370	1.66_{c} (.60)	130	1.55 (.60)

Note. G3 = Grade 3; G5 = Grade 5. Unweighted cell counts have been rounded to nearest 10 to comply with IES restricted-use data reporting requirements.

[a] $p < .05$ significant difference compared to Male children

[b] $p < .05$ significant difference compared to White children

[c] $p < .05$ significant difference compared to Black children

[d] $p < .05$ significant difference compared to Hispanic children

Table 3.

Associations between Home, Parental, and Community Predictors and Social-Emotional Learning Outcomes

Predictor		B	B SE	β
Altruistic behavior (G5)				
	Altruistic behavior (G3)	.37	.03	.32***
	Female	.04	.04	.03
	Black	.23	.05	.15***
	Hispanic/Latino	.10	.06	.05
	Other	.29	.07	.10***
	Socio-demographic risk (G3)	.08	.03	.08**
	Household chaos (G3)	.02	.04	.01
	Poor monitoring/supervision (G3)	.12	.10	.03
	Positive parenting (G3)	.12	.05	.06*
	Intergenerational closure (G3)	.04	.04	.04
	Child-centered social control (G3)	.03	.03	.04
	Community access to resources (G3)	-.02	.03	-.02
	Community risk (G3)	.14	.04	.13***
Empathy (G5)				
	Empathy (G3)	.25	.03	.18***
	Female	.17	.02	.19***
	Black	-.17	.03	-.17***
	Hispanic/Latino	-.12	.03	-.10***
	Other	-.03	.04	-.02
	Socio-demographic risk (G3)	.00	.02	.00
	Household chaos (G3)	.00	.03	.00
	Poor monitoring/supervision (G3)	.00	.06	.00
	Positive parenting (G3)	.03	.03	.03
	Intergenerational closure (G3)	.02	.02	.03
	Child-centered social control (G3)	.03	.02	.05
	Community access to resources (G3)	.02	.02	.03
	Community risk (G3)	-.03	.02	-.04

(continued)

(continued)

Predictor	B	B SE	β
Self-efficacy for peer interaction (G5)			
Self-efficacy for peer interaction (G3)	.28	.03	.25***
Female	-.10	.03	-.08**
Black	.12	.04	.09**
Hispanic/Latino	-.03	.05	-.02
Other	-.02	.06	-.01
Socio-demographic risk (G3)	-.06	.02	-.07*
Household chaos (G3)	.00	.04	.00
Poor monitoring/supervision (G3)	-.06	.08	-.02
Positive parenting (G3)	-.09	.04	-.06*
Intergenerational closure (G3)	.09	.03	.09**
Child-centered social control (G3)	-.07	.03	-.08**
Community access to resources (G3)	-.02	.02	-.02
Community risk (G3)	-.02	.03	-.02
Normative beliefs about aggression (G5)			
Normative beliefs about aggression (G3)	.21	.04	.13***
Female	-.20	.03	-.15***
Black	.25	.04	.17***
Hispanic/Latino	.14	.05	.08**
Other	.13	.06	.05*
Socio-demographic risk (G3)	.04	.03	.05
Household chaos (G3)	-.02	.04	-.01
Poor monitoring/supervision (G3)	.22	.09	.06*
Positive parenting (G3)	-.01	.04	-.01
Intergenerational closure (G3)	-.01	.03	-.01
Child-centered social control (G3)	-.08	.03	-.09**
Community access to resources (G3)	-.02	.02	-.02
Community risk (G3)	-.03	.03	-.03

(continued)

(continued)

Predictor	B	B SE	β
ADHD-related Behavior (G5)			
ADHD-related behavior (G3)	.44	.03	.37***
Female	-.25	.03	-.19***
Black	.11	.04	.08**
Hispanic/Latino	-.01	.04	-.01
Other	-.04	.06	-.02
Socio-demographic risk (G3)	.05	.02	.05*
Household chaos (G3)	.02	.03	.01
Poor monitoring/supervision (G3)	.02	.08	.01
Positive parenting (G3)	-.05	.04	-.03
Intergenerational closure (G3)	-.03	.03	-.03
Child-centered social control (G3)	.04	.03	.05
Community access to resources (G3)	.01	.02	.01
Community risk (G3)	.04	.03	.04

Note. G3 = Grade 3; G5 = Grade 5

*$p < .05$; **$p < .01$; ***$p < .001$

Table 4.

Associations between Home, Parental, and Community Predictors and Social-Emotional Learning Outcomes by Gender

Gender:	Male			Female		
Predictor	B	B SE	β	B	B SE	β
Altruistic behavior (G5)						
Altruistic behavior (G3)	.46	.04	.39***	.27	.04	.24***
Black	.23	.07	.15**	.23	.07	.15**
Hispanic/Latino	.05	.08	.03	.15	.08	.08
Other	.30	.10	.10**	.30	.10	.11**
Socio-demographic risk (G3)	.09	.04	.08*	.08	.04	.08
Household chaos (G3)	.00	.06	.00	.05	.07	.03
Poor monitoring/supervision (G3)	.07	.14	.02	.17	.15	.04
Positive parenting (G3)	.11	.07	.06	.16	.07	.08*
Intergenerational closure (G3)	.03	.05	.03	.04	.05	.04
Child-centered social control (G3)	.00	.05	.00	.07	.05	.07
Community access to resources (G3)	.00	.04	.00	-.05	.04	-.05
Community risk (G3)	.17	.05	.15**	.11	.06	.10
Empathy (G5)						
Empathy (G3)	.28	.04	.21***	.21	.04	.15***
Black	-.11	.05	-.10*	-.22	.04	-.23***
Hispanic/Latino	-.15	.05	-.12**	-.09	.04	-.08*
Other	-.06	.07	-.03	-.02	.05	-.01
Socio-demographic risk (G3)	-.02	.03	-.04	.01	.02	.01
Household chaos (G3)	-.05	.04	-.05	.06	.04	.06
Poor monitoring/supervision (G3)	-.04	.09	-.02	.03	.08	.01
Positive parenting (G3)	-.05	.04	-.04	.12	.04	.10**
Intergenerational closure (G3)	.02	.03	.03	.02	.03	.02
Child-centered social control (G3)	.00	.03	.00	.05	.02	.08
Community access to resources (G3)	.05	.02	.07	.00	.02	.00
Community risk (G3)	-.02	.03	-.03	-.04	.03	-.06

(continued)

(continued)

Gender:	Male			Female		
Predictor	B	B SE	β	B	B SE	β
Self-efficacy for peer interaction (G5)						
Self-efficacy for peer interaction (G3)	.31	.04	.28***	.25	.04	.22***
Black	.02	.06	.01	.21	.06	.16***
Hispanic/Latino	-.11	.06	-.07	.06	.06	.03
Other	-.19	.09	-.08*	.12	.08	.05
Socio-demographic risk (G3)	-.02	.04	-.02	-.09	.03	-.10**
Household chaos (G3)	.05	.05	.04	-.08	.05	-.05
Poor monitoring/supervision (G3)	-.02	.12	-.01	-.06	.12	-.02
Positive parenting (G3)	-.07	.06	-.04	-.14	.06	-.08*
Intergenerational closure (G3)	.10	.04	.11*	.07	.04	.08
Child-centered social control (G3)	-.11	.04	-.12**	-.04	.04	-.05
Community access to resources (G3)	.01	.03	.01	-.04	.03	-.04
Community risk (G3)	-.06	.04	-.07	.04	.04	.04
Normative beliefs about aggression (G5)						
Normative beliefs about aggression (G3)	.23	.05	.14***	.19	.05	.11***
Black	.16	.07	.10*	.32	.05	.26***
Hispanic/Latino	.14	.08	.08	.13	.06	.09*
Other	.17	.11	.06	.10	.07	.05
Socio-demographic risk (G3)	.09	.04	.09*	.01	.03	.02
Household chaos (G3)	-.01	.06	-.01	-.03	.05	-.02
Poor monitoring/supervision (G3)	.30	.14	.07*	.15	.11	.05
Positive parenting (G3)	.05	.07	.03	-.08	.05	-.05
Intergenerational closure (G3)	-.01	.05	-.01	.01	.04	.01
Child-centered social control (G3)	-.06	.05	-.06	-.10	.03	-.14**
Community access to resources (G3)	-.07	.04	-.07*	.03	.03	.03
Community risk (G3)	-.01	.05	-.01	-.06	.04	-.06

(continued)

(continued)

Gender:	Male			Female		
Predictor	B	B SE	β	B	B SE	β
ADHD-related Behavior (G5)						
ADHD-related Behavior (G3)	.47	.04	.39***	.39	.04	.35***
Black	.08	.06	.05	.13	.04	.12**
Hispanic/Latino	-.11	.07	-.06	.09	.05	.07
Other	-.03	.09	-.01	-.05	.06	-.02
Socio-demographic risk (G3)	.13	.04	.13**	-.02	.03	-.03
Household chaos (G3)	-.04	.05	-.03	.09	.04	.07*
Poor monitoring/supervision (G3)	.00	.12	.00	.03	.09	.01
Positive parenting (G3)	-.10	.06	-.05	.02	.05	.01
Intergenerational closure (G3)	-.10	.04	-.09*	.03	.03	.04
Child-centered social control (G3)	.05	.04	.05	.03	.03	.04
Community access to resources (G3)	.02	.03	.02	.00	.02	.01
Community risk (G3)	.01	.04	.01	.07	.03	.08*

Note. G3 = Grade 3; G5 = Grade 5

*$p < .05$; **$p < .01$; ***$p < .001$

Table 5.

Associations between Home, Parental, and Community Predictors and Social-Emotional Learning Outcomes by Race/Ethnicity

Race/Ethnicity:	White			Black			Hispanic/Latino			Other		
Predictor	B	B SE	β	B	B SE	β	B	B SE	β	B	B SE	β
Altruistic behavior (G5)												
Altruistic behavior (G3)	.41	.04	.42***	.31	.07	.25***	.40	.07	.35***	.22	.15	.16
Female	.06	.04	.05	-.05	.08	-.03	.07	.08	.05	.12	.18	.07
Socio-demographic risk (G3)	.09	.05	.08*	.11	.07	.09	.11	.06	.12	-.02	.17	-.02
Household chaos (G3)	.07	.05	.05	-.09	.12	-.05	-.03	.12	-.02	.10	.25	.05
Poor monitoring/supervision (G3)	.06	.16	.02	.10	.20	.03	.09	.20	.03	.78	.54	.15
Positive parenting (G3)	.17	.06	.11**	.18	.12	.09	.00	.12	.00	.05	.25	.02
Intergenerational closure (G3)	.01	.05	.01	-.05	.09	-.04	.11	.07	.10	.13	.16	.11
Child-centered social control (G3)	.12	.05	.13*	.06	.07	.06	-.04	.07	-.05	-.09	.12	-.10
Community access to resources (G3)	-.02	.03	-.03	-.05	.07	-.04	.01	.07	.01	-.04	.13	-.04
Community risk (G3)	.11	.07	.08	.18	.07	.16*	.18	.07	.16*	.03	.17	.02

(continued)

(continued)

Race/Ethnicity:	White			Black			Hispanic/Latino			Other		
Predictor	B	B SE	β	B	B SE	β	B	B SE	β	B	B SE	β
Empathy (G5)												
Empathy (G3)	.30	.04	.23***	.30	.06	.24***	.19	.07	.14**	-.10	.12	-.07
Female	.18	.03	.22***	.06	.04	.06	.29	.05	.32***	.25	.08	.28**
Socio-demographic risk (G3)	-.02	.03	-.03	.00	.04	.00	.01	.03	.02	-.01	.07	-.01
Household chaos (G3)	-.02	.03	-.02	.05	.06	.04	.01	.07	.01	.08	.13	.07
Poor monitoring/supervision (G3)	.05	.10	.02	-.13	.11	-.05	.07	.11	.03	.10	.27	.04
Positive parenting (G3)	.00	.04	.00	.08	.06	.07	.16	.07	.14*	-.10	.11	-.09
Intergenerational closure (G3)	.05	.03	.08	-.02	.05	-.02	.01	.04	.02	.03	.07	.05
Child-centered social control (G3)	.00	.03	.00	.05	.04	.08	.02	.04	.03	.07	.05	.13
Community access to resources (G3)	.02	.02	.04	.02	.04	.02	.05	.04	.07	-.05	.06	-.08
Community risk (G3)	-.06	.05	-.06	-.03	.04	-.04	-.01	.04	-.01	-.07	.07	-.10

(continued)

(continued)

Race/Ethnicity:	White			Black			Hispanic/Latino			Other		
Predictor	B	B SE	β	B	B SE	β	B	B SE	β	B	B SE	β
Self-efficacy for peer interaction (G5)												
Self-efficacy for peer interaction (G3)	.32	.04	.28***	.17	.05	.16***	.32	.06	.27***	.29	.09	.29**
Female	-.20	.04	-.16***	.02	.06	.01	-.05	.07	-.04	.06	.11	.05
Socio-demographic risk (G3)	-.11	.04	-.10**	-.03	.05	-.03	-.01	.05	-.01	-.07	.09	-.08
Household chaos (G3)	.01	.05	.01	-.11	.08	-.07	-.03	.10	-.02	.03	.17	.02
Poor monitoring/supervision (G3)	.21	.15	.05	-.03	.14	-.01	-.32	.17	-.10	.04	.35	.01
Positive parenting (G3)	-.08	.06	-.05	-.12	.08	-.08	-.11	.10	-.06	-.03	.15	-.02
Intergenerational closure (G3)	.03	.05	.03	.15	.06	.15*	.16	.06	.15*	-.04	.10	-.05
Child-centered social control (G3)	-.03	.05	-.03	-.05	.05	-.06	-.13	.06	-.15*	-.06	.07	-.08
Community access to resources (G3)	-.01	.03	-.01	-.05	.05	-.05	.01	.06	.01	-.03	.08	-.03
Community risk (G3)	-.01	.07	-.01	.06	.05	.07	-.02	.06	-.01	-.26	.10	-.28**

(continued)

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Race/Ethnicity:	White			Black			Hispanic/Latino			Other		
Predictor	B	B SE	β	B	B SE	β	B	B SE	β	B	B SE	β
Normative beliefs about aggression (G5)												
Normative beliefs about aggression (G3)	.28	.05	.17***	.23	.07	.15**	.11	.09	.06	.02	.17	.01
Female	-.19	.04	-.18***	-.10	.07	-.07	-.34	.07	-.25***	-.36	.13	-.25**
Socio-demographic risk (G3)	.11	.04	.11**	.00	.05	.00	.04	.05	.05	.04	.11	.04
Household chaos (G3)	-.01	.04	-.01	-.16	.09	-.09	.04	.10	.02	.14	.21	.08
Poor monitoring/supervision (G3)	.20	.13	.06	.42	.17	.12*	.09	.18	.03	-.13	.42	-.03
Positive parenting (G3)	.08	.05	.06	-.06	.10	-.03	-.20	.11	-.11	.15	.18	.08
Intergenerational closure (G3)	-.02	.04	-.02	-.01	.07	-.01	.08	.07	.07	-.15	.12	-.14
Child-centered social control (G3)	-.07	.04	-.08	-.05	.06	-.06	-.09	.06	-.10	-.13	.09	-.16
Community access to resources (G3)	.01	.02	.01	-.02	.06	-.02	-.14	.06	-.13*	.08	.09	.08
Community risk (G3)	-.10	.06	-.08	.05	.06	.05	-.04	.06	-.03	-.17	.12	-.15

(continued)

(continued)

Race/Ethnicity:	White			Black			Hispanic/Latino			Other		
Predictor	B	B SE	β	B	B SE	β	B	B SE	β	B	B SE	β
ADHD-related Behavior (G5)												
ADHD-related Behavior (G3)	.48	.04	.42***	.32	.05	.26***	.50	.06	.40***	.33	.10	.28**
Female	-.22	.04	-.17***	-.30	.06	-.22***	-.19	.06	-.15**	-.40	.10	-.33***
Socio-demographic risk (G3)	.07	.04	.06	.08	.05	.08	-.01	.04	-.02	.09	.08	.11
Household chaos (G3)	.02	.04	.01	-.11	.08	-.06	-.02	.08	-.01	.26	.14	.18
Poor monitoring/supervision (G3)	.29	.14	.07*	.23	.14	.07	-.39	.14	-.14**	-.08	.31	-.02
Positive parenting (G3)	.01	.05	.00	-.18	.08	-.10*	-.07	.08	-.04	-.05	.13	-.03
Intergenerational closure (G3)	-.09	.04	-.09*	.01	.06	.00	.05	.05	.06	-.08	.09	-.09
Child-centered social control (G3)	.09	.05	.08	.18	.05	.19***	-.09	.05	-.11	.01	.06	.01
Community access to resources (G3)	.01	.03	.01	.03	.05	.03	-.05	.05	-.05	.10	.07	.12
Community risk (G3)	.05	.07	.04	.04	.05	.04	.08	.05	.08	-.03	.08	-.04

Note. G3 = Grade 3; G5 = Grade 5;

*$p < .05$; **$p < .01$; ***$p < .001$

CHAPTER 3.

ECOLOGICAL INFLUENCES ON CHILDREN'S SOCIAL-EMOTIONAL COMPETENCE AND BEHAVIOR TRAJECTORIES

Abstract

Although ecological systems theory suggests that home, parental, and community characteristics may influence children's social-emotional outcomes, there has been limited exploration of the trajectories of social-emotional competence and behavior spanning the transition from middle to late childhood. Using data from the Social and Character Development Program, the analytic sample comprised nearly 3,200 students in grades 3 to 5. Growth mixture modeling was used to identify developmental trajectories for five social-emotional competence and behavior outcomes, and assess their associations with ecological predictors. Three trajectory groups emerged for each of the outcomes. Home, parental, and community characteristics in grade 3 significantly predicted youth social-emotional competence and behavior trajectories. Prevention efforts targeting middle childhood ecological contexts may promote positive development through late childhood.

3.1 Introduction

Developmental research has shown that childhood social-emotional competence and behavior predict psychopathology and other negative outcomes later in life (Ensminger, Juon, & Fothergill, 2002; Loeber & Farrington, 2000). "Competence" typically refers to a person's successful adaptation to their environment by accomplishing major developmental tasks with regard to their age, gender, and cultural or societal norms (Masten & Coatsworth, 1998). During childhood, youth are expected to navigate their social environment while engaging their family, teachers, and peers. To that end, social-emotional competence affords children the ability to engage in positive interactions with others, form relationships, control impulses, identify and regulate personal emotions, understand and respond accordingly to others' emotions and behaviors, and recognize one's own strengths and limitations (Zins, Bloodworth, Weissberg, & Walberg, 2007). Research suggests that acquiring these skills also has implications for school success and academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Zins et al., 2007). Despite their importance, however, little is known about the development of social-emotional competence and behavior between middle and late childhood.

More research has begun to recognize the multidimensional nature of social-emotional competence and behavior, which comprise several positive or negative outcomes (Carlo & Randall, 2002; Carter, Briggs-Gowan, & Davis, 2004; Masten & Coatsworth, 1995). Positive attitudes and behaviors, for instance, might include altruistic behavior or empathy. Meanwhile, negative social-emotional competence and behavior dimensions may include aggressive or disruptive behaviors. To date, few studies have investigated the developmental trajectories of these specific social-emotional competence

and behavior outcomes, especially between middle and late childhood (Kokko et al., 2006). Furthermore, most research has focused on negative as opposed to positive outcomes (Moffitt, 2006). To address these gaps, we sought to identify the developmental trajectories of five social-emotional competence and behavior outcomes. We also investigated the influence of ecological predictors on social-emotional competence and behavior development. This study will illustrate the normative development of social-emotional competence and behavior between middle and late childhood, a crucial yet understudied transitional period in the life-course.

Ecological Predictors of Social-Emotional Competence and Behavior

We draw upon developmental (Sroufe, Egeland, Carlson, & Collins, 2005) and ecological (Bronfenbrenner & Morris, 1998) frameworks to better understand changes in social-emotional competence and behavior between middle and late childhood. Specifically, developmental theory (Sroufe et al., 2005) suggests that a person's individual qualities and experiences may impact and shape their life outcomes through a variety of processes. The nature of these qualities and experiences may be characterized as risk, promotive, protective, or vulnerability factors (Gutman, Sameroff, & Cole, 2003). Risk and promotive factors are an individual's qualities or experiences that have direct effects on negative or positive outcomes, respectively, whereas protective and vulnerability factors influence the magnitude of these associations. Meanwhile, according to the ecological framework (Bronfenbrenner & Morris, 1998), factors stemming from multiple contexts (e.g., home, family, community) may also influence an individual's development. Integrating these frameworks provides a broader perspective for

investigating factors that influence children's social-emotional development (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001).

Exploring how specific environmental characteristics influence outcomes is crucial for shedding light on childhood social-emotional development. Most studies assessing the influence of specific contexts have focused on school and classroom ecologies, whereas few have explored the multiple impacts of home, parental, and community characteristics simultaneously (Hoglund & Leadbeater, 2004; Pratt, Turner, & Piquero, 2004). Thus, more research is needed to examine the contextual characteristics that predict developmental trajectories of social-emotional competence and behavior. Examining how particular home, parental, and community characteristics affect children's social-emotional development will be crucial for identifying targets for prevention and intervention efforts. Next we consider potential influences from three ecological domains: home, parental, and community.

Home. The family stress model (Conger, Rueter, & Conger, 2000) suggests that home environments characterized by high economic pressure may increase children's risk of emotional distress in adolescence. For example, research has shown that socio-demographic risk factors, such as family income (Leve, Kim, & Pears, 2005), divorce (Ge, Natsuaki, & Conger, 2006), or parental education (Wickrama, Conger, Lorenz, & Jung, 2008), may adversely affect youth social-emotional development. In addition, studies have begun to investigate how the physical environment of the home may impact children's social-emotional outcomes. Namely, research has shown that chaotic home environments, characterized by high levels of noise, crowding, or situational traffic patterns, may adversely affect children's adjustment (Evans, Gonnella, Marcynyszyn,

Gentile, & Salpekar, 2005). Despite the growing body of research concerning the influence of home environments, it has been limited in a variety of ways. For instance, few studies have examined associations between cumulative socio-demographic risk and social-emotional outcomes. Moreover, while research has documented longitudinal associations between household chaos and social-emotional outcomes, the effects of chaos on social-emotional trajectories are not well understood. Meanwhile, as previously mentioned, there have been few studies examining the simultaneous influence of multiple predictors arising from the home ecological context on children's social-emotional development.

Parental. In contrast to the limited scientific literature on home environment impacts, there has been considerable research linking parental characteristics to social-emotional outcomes in children. The developmental model of antisocial behavior, which has received wide empirical support, suggests that poor parenting practices such as poor monitoring may lead to negative social-emotional outcomes in children (Patterson, DeBaryshe, & Ramsey, 1989; Pettit et al., 2001; Smith & Farrington, 2004). Meanwhile, research on resiliency has sought to document the promotive effects that certain parenting practices may have on children's social-emotional competence and behavior (Luthar, Cicchetti, & Becker, 2000; Rutter, 1999). For example, studies have shown that warm and supportive parenting may increase pro-social behavior in youth (Bor, Sanders, & Markie-Dadds, 2002). Despite these findings, little is known about the associations between parenting practices and children's trajectories of social-emotional competence and behavior. Consistent with developmental theories, it is important to explore both the

risk and promotive effects of parenting on children's social-emotional competence and behavior trajectories.

Community. Research suggests that as youth enter late childhood and early adolescence, community influences play an increased role in their development (Brody et al., 2001). According to social disorganization theory, communities are multidimensional environments that may affect children's social-emotional competence and behavior (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). For example, community efforts to supervise and control youth as well as informal ties between neighbors may reduce the likelihood that children engage in risk behaviors (Sampson, Morenoff, & Gannon-Rowley, 2002). Based on institutional models of communities, the availability of resources may bolster positive social-emotional development in children (Chase-Lansdale et al., 1997; Jencks & Mayer, 1990). In addition, according to epidemic or contagion models of communities as well as social learning theory, youth who are exposed to neighborhood violence, gang activities, or other community risk factors, may be more likely to adopt negative behaviors (Guerra, Huesmann, & Spindler, 2003; Ingoldsby & Shaw, 2002). Although research suggests that these various community characteristics may affect youth social-emotional outcomes, more studies are needed to assess their simultaneous influences.

Developmental Trajectories of Social-Emotional Competence and Behavior

Most studies addressing childhood development have used variable-centered analytic approaches to assess the extent to which ecological predictors may influence youth social-emotional outcomes. These approaches are limited, however, by assuming that populations are homogeneous and that the effects of predictors do not vary across

subgroups of children (Muthén & Muthén, 2000). Rather than conceptualizing variables as predictors and outcomes, person-centered approaches use variables to represent properties of individuals and identify distinct categories or groups of individuals based on a set of these properties. In this manner, person-centered approaches account for heterogeneity in populations (McCutcheon, 1987; Muthén & Muthén, 2000). Whereas variable-centered approaches may further our knowledge on how ecological influences could be linked to subsequent changes in social-emotional outcomes, person-centered approaches allow us to determine whether groups of individuals may differ based on their trajectories of social-emotional development. As an alternative to variable-centered analytic approaches, person-centered analytic approaches are becoming increasingly popular in social-emotional development research (e.g., Sturge-Apple, Davies, & Cummings, 2010).

Recent studies using person-centered analytic approaches have shown that groups of children may follow distinct trajectories of social-emotional development over time. Much of the research, however, has focused on negative outcomes (Bradshaw, Schaeffer, Petras, & Ialongo, 2010; Moffit, 2006). For example, studies have shown that the development of negative behaviors (e.g., disruptive behaviors) may begin during early childhood and persist into adulthood for some children, while others may display these behaviors only during adolescence (Burke, Loeber, & Birmaher, 2002; Moffitt, 2006). Only recently have studies begun to investigate trajectories of positive social-emotional development. Research suggests that, similar to negative social-emotional development, youth may also differ based on their course of positive development (Kokko et al., 2006). Many of these studies, however, have been limited by focusing on adolescence.

Furthermore, they used global measures of positive development, rather than focusing on specific, positive, social-emotional outcomes more broadly, such as pro-social attitudes and behaviors (Lewin-Bizan et al., 2010; Phelps et al., 2007).

There is paucity of research that has explored youth developmental trajectories of social-emotional competence and behavior spanning the transition from middle to late childhood (for examples, see Côté, Tremblay, Nagin, Zoccolillo, & Vitaro, 2002; Jobe-Shields, Cohen, & Parra, 2011). Rather, most research has examined development from early to middle childhood, as youth are transitioning into school. These studies suggest that early childhood environments (e.g., preschool/daycare, home environment, parental characteristics) play influential roles in youth social and cognitive development, such as social withdrawal, externalizing behavior, and language skills (Ladd & Burgess, 1999; Miner & Clarke-Stewart, 2008; Peisner-Feinberg et al., 2001; Silver, Measelle, Armstrong, & Essex, 2005). In addition to early childhood, much research has assessed the transition between late childhood and adolescence, focusing largely on externalizing outcomes (e.g., aggression, delinquency, or disruptive behaviors) (Fite, Colder, Lochman, & Wells, 2008; Oh et al., 2008; Phelps et al., 2007; Vitaro, Brendgen, & Wanner, 2005). Accordingly, more studies are needed to investigate the normative development of social-emotional competence between middle and late childhood while assessing the multiple ecological predictors associated with these outcomes.

Overview of the Current Study

The current study examined the development of social-emotional competence and behavior in youth from middle to late childhood. Specifically, we explored development between grades 3 and 5. We also identified longitudinal patterns of development for both

positive and negative social-emotional competence and behavior outcomes: altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. We also investigated the extent to which specific characteristics of home (e.g., socio-demographic risk), parental (e.g., positive parenting), and community (e.g., intergenerational closure) ecological contexts during third grade had direct effects on the intercept, growth, and class membership of children's social-emotional competence and behavior trajectories. Based on prior research, we hypothesized that distinct trajectories of social-emotional and behavior outcomes would emerge between middle and late childhood. Consistent with the ecological model (Bronfenbrenner & Morris, 1998), we also hypothesized that home, parental, and community characteristics would be associated with longitudinal patterns of social-emotional competence and behavior. This work has important implications for developing prevention programs aiming to promote positive patterns of social-emotional competence and behavior from middle through late childhood.

3.2 Method

Data

Data for this study came from the Social and Character Development (SACD) Research Program, which is a large scale, multi-site, randomized trial, of seven elementary school-based interventions that sought to bolster social, behavioral, and academic outcomes among youth. The program was implemented by the Institute of Education Sciences (IES), in collaboration with the Division of Violence Prevention in the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC). Mathematica Policy Research, Inc. was contracted to conduct the

research evaluation. These organizations comprised the Social and Character Development Program Research Consortium (SACDRC, 2010).

Procedure

Only students whose parents provided written consent were eligible to participate in the study at each of five waves. New entrants to the school or parents and students who did not consent to participate in the study previously were given the opportunity to provide consent at each follow up. If primary caregivers refused consent for their child at any time, the SACDRC removed their data. Roughly 65% of primary caregivers consented to having their child and child's teacher participate in the survey administration; surveys were completed by 94% of the children and 96% of the teachers. Approximately 63% of primary caregivers consented to their own participation in the study; surveys were completed by 92% of the primary caregivers. Ethical guidelines were followed in the conduct of this research. The Public/Private Ventures Institutional Review Board, as well as the institutional review boards for each of the research study sites, approved the data collection procedures for this study.

Participants

Data were available for over 6,500 students from two cohorts. The first cohort of nearly 6,000 third grade students were recruited in fall 2004 from more than 80 schools, and the second cohort of over 600 third grade students were recruited in fall 2005 from roughly 10 schools. We focused our analyses on the first cohort, for which data from five time points were available (fall 2004, spring 2005, fall 2005, spring 2006, and spring 2007). The analytic sample comprised nearly 2,300 students who had covariate data available and were assigned to control schools to avoid the possibility of confounding

due to intervention effects. The sample comprised mostly females (51.4%) and was ethnically diverse (White = 45.5% and Non-White = 54.5%). The mean age of the sample at grade 3 was 8.6 years (*SD* = .46).

Measures

The SACDRC collected data from the students, caregivers, and teachers using standardized collection procedures. Each data collection involved administering a core set of instruments that measured the social-emotional outcomes targeted by the SACD Program. We used the SACDRC derived measures in the current analyses (Kaminski, David-Ferdon, & Battistich, 2009; SACDRC, 2010).

Social-Emotional Competence and Behavioral Outcome Measures

Altruistic behavior. Primary caregivers completed the Altruism Scale (primary caregiver version; Solomon, Battistich, Watson, Schaps, & Lewis, 2000). This scale is an 8-item measure in which caregivers reported on a 4-point scale ranging from "never" to "many times" the frequency that their child helped others in various circumstances. Examples of these circumstances included when seeing others who were hurt or sad. The internal consistency on this measure was excellent (α = .88).

Empathy. Students completed an 11-item measure based on the Children's Empathy Questionnaire (Funk et al., 2003). They reported on a 3-point scale (e.g., "yes", "sometimes," or "no") whether they felt bad, happy, or bothered during specific situations, such as when seeing a friend get a good grade or is crying. This measure demonstrated acceptable internal consistency (α = .78).

Self-efficacy for peer interaction. Students completed the Self-Efficacy for Peer Interaction Scale (Wheeler & Ladd, 1982). They reported on a four-point scale ranging

from “REALLY EASY!” to “REALLY HARD!” how easy or hard it would be for them to respond to conflict or non-conflict peer interactions, such as telling kids to stop making fun of someone in their classroom or asking to sit with other kids at lunch. This 12-item measure had excellent internal consistency (α = .83).

ADHD-related behavior. Teachers completed a 10-item measure based on criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 2000), as well as a shortened version of the Iowa Conners Teacher Rating Scale (Pelham, Milich, Murphy, & Murphy, 1989). Teachers reported on a 4-point scale ranging from “Never” to “Always” how frequently a student displayed inattentive or hyperactive behaviors, such as making noises or having difficulties organizing tasks and activities (α = .91).

Normative beliefs about aggression. Students completed the Normative Beliefs about Aggression Scale (Huesmann & Guerra, 1997). They reported on a 4-point scale ranging from “really wrong” to “perfectly OK” how they felt about engaging in specific aggressive behaviors, including yelling at others or saying mean things to other people. This measure comprised eight items (α = .83).

Home, Parental, and Community Predictor Measures

Socio-demographic risk. Primary caregivers completed a 3-item measure asking about risk factors that were present in the child’s life, such as whether a child was from a single-parent family, resided in a low-income household (below 135% of the poverty level), or the primary caregiver did not graduate from high school. Students received a score ranging from 0 to 2 based on having no risk factors, one risk factor, or two to three risk factors. This measure has demonstrated acceptable test-retest reliability (.79).

Household chaos. Primary caregivers completed the 14-item Confusion, Hubbub, and Order Scale (CHAOS; Matheny et al., 1995). Caregivers reported whether they agreed with statements about environmental confusion or chaos in their home, such as whether there was often a fuss going on or if family plans usually do not seem to work out, on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." This measure has previously demonstrated acceptable internal consistently ($\alpha = .79$) and test-retest reliability (.74).

Poor monitoring/supervision. Primary caregivers completed the 10-item Poor Monitoring/Supervision subscale of the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996). Caregivers reported how frequently they monitored, supervised, or were aware of their children's activities, such as setting a time to be home or checking that their child came home from school, on a four-point scale ranging from "never" to "almost always" ($\alpha = .75$).

Positive parenting. Primary caregivers completed the Positive Parenting subscale of the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996), a 6-item measure. Caregivers reported how frequently they reinforced the positive behaviors of their children, such as complimenting or hugging their child when they did something well, on a four-point scale ranging from "never" to "almost always" ($\alpha = .85$).

Intergenerational closure. Primary caregivers completed the 3-item Intergenerational Closure Scale (Sampson, Morenoff, & Earls, 1999). Caregivers reported how much statements described their neighborhood's social ties, such as parents in the neighborhood knowing their children's friends or adults that kids could look up to

being present in the neighborhood, on a four-point scale ranging from "not at all" to "a lot" (α = .72).

Child-centered social control. Primary caregivers completed the 5-item Child-Centered Social Control Scale (Sampson, Morenoff, & Earls, 1999). Caregivers reported how likely neighbors could be counted on to do something in certain events, such as if children were found skipping school and hanging out on a street corner or were showing disrespect to an adult, on a five-point scale ranging from "very unlikely" to "very likely" (α = .72).

Community access to resources. Primary caregivers completed a 5-item measure developed by the SACDRC (α = .78). Caregivers reported how much statements described their neighborhood's availability of resources, such as the presence of libraries for families or safe outdoor parks for children to play, on a four-point scale ranging from "not at all" to "a lot." The items were derived from prior research concerning community protective factors (Forehand et al., 2000).

Community risk. Primary caregivers completed a 7-item measure developed by the SACDRC (α = .90). Caregivers reported how much statements described their neighborhood's presence of risk indicators, such as drugs being sold and used by some people in the neighborhood or there being gang fights in the neighborhood, on a four-point scale ranging from "not at all" to "a lot." The items were derived from prior research concerning community risk factors (Forehand et al., 2000).

Demographics

Students reported whether they were a "boy" or "girl" on the questionnaire during each data collection, while primary caregivers reported their child's race/ethnicity

(White; Black or African American; Hispanic or Latino; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; Other). Due to concerns over potentially small cell sizes, the race/ethnicity variable was dichotomized into "White" and "Non-White."

Data Analysis

We used Mplus version 5 (Muthén & Muthén, 2007) to construct growth mixture models (GMM) and identify trajectory patterns for each of our five social-emotional competence and behavior outcomes. Figure 1 illustrates the hypothesized latent variable model for our study. The observed indicators for the growth models comprised the social-emotional competence and behavior outcomes measured at each of the data collection points. Accordingly, time was treated as a fixed parameter and was determined by the spacing between the five data collection points (0, 1, 2, 3, and 5). For a given number of latent trajectory classes, GMM estimates the growth parameters (intercept I, linear slope S, and quadratic slope Q) that determine the shape of each curve (Muthén, 2004; Muthén & Shedden, 1999). GMM also estimates the probability of membership for a latent trajectory class, C. The hypothesized model assumed that a set of covariates, home, parental, and community characteristics influenced latent trajectory class membership probability and growth parameters. Consistent with prior GMM research, we restricted certain parameters to be equal across latent classes or constrained certain parameters to zero for identifiability purposes. Specifically, the residual variances of the person-time indicators and random intercepts, as well as the coefficients for the predictors and covariates on the growth factors, were held equal across latent classes. The residual variances of the linear and quadratic slopes were also constrained to zero. The analyses

used 1,000 to 4,000 automated random starts in the optimization to ensure identification of the global maximum likelihood.

For each of our five social-emotional competence and behavior outcomes, we fit GMMs with consecutively increasing latent trajectory classes from two to five. To select our final models, we used substantive interpretation and statistical tests to identify the most parsimonious and meaningful solution, particularly with regard to class prevalence and interpretability of the latent class trajectory. Subjective criteria included Akaike information criterion (AIC), Bayesian information criterion (BIC), sample-size adjusted Bayesian information criterion (ABIC), and entropy scores. We favored models with the lowest AIC, BIC, and ABIC values (Schwarz, 1978). Entropy scores represent a measure of classification precision. Thus, we favored higher entropy scores, which indicated greater precision. Statistical tests included Lo-Mendell-Rubin (LMR; Lo, Mendell, & Rubin, 2001) and bootstrap likelihood ratio tests (BLRT; McLachlan & Peel, 2000). In making statistical comparisons, the distribution of two times the log-likelihood difference is typically chi-square distributed. This is not applicable in models utilizing latent class approaches, however. The LMR method thus has the advantage of using the correct distribution of two times the log-likelihood difference for mixture analyses. The LMR likelihood ratio test compares models with *k*-1 versus *k* classes; significant results suggest rejecting the *k*-1-class model and favoring a model with at least *k* classes. The BLRT approach generates data to obtain the bootstrap distribution of two times the log-likelihood difference; significant results also suggest rejecting the *k*-1-class model. Simulation studies assessing these approaches are available in Nylund et al. (2007).

Concerning missing data, latent variable modeling in Mplus has the advantage of using full information maximum likelihood estimation, which is a widely accepted method for handling data that are missing at random (Arbuckle, 1996; Little, 1995). This approach obtains estimates using all available data for a given case (Muthén & Shedden, 1999; Schafer & Graham, 2002). Furthermore, we examined the proportion of data present for the variables included in our analysis. We found that the covariance coverage of data in our analyses exceeded 0.10, which is the minimum necessary for models to converge (Muthén & Muthén, 2007).

3.3 Results

Social-Emotional Competence and Behavior Growth Model Selection

Table 1 shows the selection indices for our growth mixture model. Overall, the three-class model was chosen as the best model for each social-emotional competence and behavior outcome. Specifically, with regard to altruistic behavior, AIC and ABIC supported the five-class solution, while the entropy supported the four-class solution. However, the LMR likelihood ratio test did not favor either of the four- or five-class solutions. Meanwhile, BIC and LMR indicated support for the three-class solution, although support based on the LMR statistic was marginal. Concerning empathy, AIC and ABIC supported the five-class solution, while BIC and entropy supported the four-class solution. However, LMR failed to support either of the four- or five-class solutions. Rather, it demonstrated clear support for the three-class solution. Concerning self-efficacy for peer interaction, AIC, ABIC, and entropy supported the five-class solution. However, BIC supported the three-class solution. Concerning both normative beliefs about aggression and ADHD-related behavior, AIC, BIC, and ABIC supported the five-

class solutions, but LMR and entropy supported the three-class solutions over the five-class solutions.

Social-Emotional Competence and Behavior Growth Trajectories

Figure 2 presents the latent trajectory class mean scores and prevalence estimates across each of the social-emotional competence and behavior outcomes. A moderate-stable class was present for all outcomes and represented the largest class. For altruistic behavior, the moderate-stable class comprised 73.3% of children. Meanwhile, a substantial proportion of children were in a moderate-increasing class (19.2%). A smaller group of children were in a high-decreasing class (7.5%), who initially displayed higher levels of altruistic behavior that gradually decreased. For empathy, the moderate-stable class included 60.8% of children. Two classes emerged comprising children with decreasing trajectories of empathy: a moderate-decreasing class (21.8%) and a moderate-late decrease class (17.6%). With regard to self-efficacy for peer interaction, the moderate-stable class involved 66.5% of children. We identified two trajectory classes comprising children whose self-efficacy changed towards the end of fourth grade. One was a low-late increase class, which comprised 17.8% of children; those in this class had generally lower self-efficacy, which later increased at the end of fourth grade. The other was a moderate-late decrease class that included 15.7% of children. In contrast to the low-late increasing class, those in the moderate-late decrease class showed a decline in self-efficacy at the end of fourth grade.

For normative beliefs about aggression, the moderate-stable class comprised 86.1% of children. A high-increase-decrease class of children emerged, which included 7.3% of children. These children had greater normative beliefs about aggression

compared to those in other classes, which increased until the start of fourth grade but later decreased through the end of fifth grade. We also identified, a moderate-fast increase class, which comprised 6.6% of children. These children began with moderate levels of normative beliefs about aggression, which rapidly increased between grades 3 and 5, such that it exceeded levels reported by children in the high-increase-decrease class. For ADHD-related behavior, the moderate-stable class included 77.2% of children. Meanwhile, a high-decreasing class comprising 7.6% of children emerged. These individuals began with higher levels of ADHD-related behavior, which declined through fourth grade before stabilizing. A moderate-increase-decrease class also emerged, which included 15.2% of children. These individuals had relatively moderate levels of ADHD-related behavior, which increased from third grade through fourth grade, exceeding ADHD-related behavior reported for those in the high-decreasing class, before finally stabilizing. Table 2 displays the latent trajectory class growth factor estimates for each of the outcomes.

Predictors of Social-Emotional Competence and Behavior Growth Factors

Table 3 presents the regression estimates for the ecological predictors on the growth factors for each of the social-emotional competence and behavior outcomes. The intercept for these estimates were centered at fall grade 3. Thus, with regard to the intercept coefficients, the results reported here describe cross-sectional associations between ecological predictors and social-emotional competence and behavior estimates at fall grade 3. Altruistic behavior was greater among female children (Unstandardized Coefficient [b] = 0.110), but lower among White children (b = -0.188). Those who received positive parenting (b = 0.138) or resided in a community with greater

intergenerational closure (b = 0.105) in grade 3 demonstrated higher levels of altruistic behavior. Interestingly, both socio-demographic risk (b = 0.059) as well as community risk (b = 0.139) increased altruistic behavior. Concerning altruistic behavior development, the linear slope increased (b = 0.112) while the quadratic slope decreased (b = -0.018) among White children. Furthermore, community risk at grade 3 was positively associated with the quadratic slope (b = 0.011) for altruistic behavior. With regard to empathy, girls reported higher levels compared to boys (b = 0.092). Meanwhile, none of the ecological predictors at grade 3 were associated with the growth factors for empathy. Compared to boys, self-efficacy for peer interaction was lower among girls (b = -0.111). However, positive parenting at grade 3 predicted greater self-efficacy for peer interaction (b = 0.100).

Normative beliefs about aggression were significantly lower among girls (b = -0.078) and White children (b = -0.044). In addition, household chaos (b = 0.041) and community risk (b = 0.33) at grade 3 were significantly associated with normative beliefs about aggression. Concerning the development of normative beliefs about aggression, poor monitoring/supervision at grade 3 were significantly associated with both the linear (b = -0.092) and quadratic (b = 0.023) slopes. Similar to normative beliefs about aggression, ADHD-related behavior was lower among girls (b = -0.222) and White children (b = -0.145). Meanwhile, community risk at grade 3 was positively associated with ADHD-related behavior (b = 0.094). With regard to the development of ADHD-related behavior, the linear slope was greater among White children (b = 0.049).

Predictors of Social-Emotional Competence and Behavior Latent Trajectory Class

Table 4 presents the proportions and means of the ecological predictor characteristics for each of the latent trajectory classes across our social-emotional competence and behavior outcomes. Meanwhile, Table 5 shows the multinomial regression coefficients for the associations between the ecological predictors and odds of class membership in a latent trajectory class compared to the odds of being in the moderate-stable latent trajectory class. We report the associations between ecological predictors and children's social-emotional competence and behavior trajectories in the subsequent sections.

Altruistic behavior. The proportion of children who were White was significantly lower in the moderate-increasing class (16.1%) compared to the moderate-stable (51.8%) and high-decreasing (58.9%) classes. Furthermore, children in the moderate-increasing class had the highest levels of socio-demographic risk ($M = 0.847$) and community risk ($M = 1.751$). Children in the moderate-increasing class also resided in communities with the lowest levels of intergenerational closure ($M = 2.920$), child-centered social control ($M = 3.987$), and access to resources ($M = 2.646$). Given the adverse ecological environment reported by children in the moderate-increasing class, these individuals may represent a group of resilient youth. In contrast, children in the high-decreasing class resided in communities with the highest levels of intergenerational closure ($M = 3.319$), child-centered social control ($M = 4.338$), and access to resources ($M = 2.986$); their homes were also characterized by higher levels of positive parenting ($M = 3.809$) and lower levels of household chaos ($M = 1.998$). Finally, poor monitoring/supervision in grade 3 ($M = 1.139$) was lower among children in the moderate-stable latent trajectory class.

Results from the multinomial regression demonstrated that individual and ecological characteristics may influence altruistic behavior latent class trajectory membership. Household chaos in grade 3 was negatively associated with being in the high-decreasing class versus the moderate-stable class (b = -0.875). However, positive parenting (b = 3.413) and community access to resources (b = 0.497) in grade 3 were positively associated with being in the high-decreasing class versus the moderate-stable class. Individual characteristics may influence altruistic behavior latent class trajectory membership as well. Namely, compared to Non-White children, White children were less likely to be in the moderate-increasing altruistic behavior class versus the moderate-stable class (b = -1.473). Poor parental monitoring/supervision had mixed effects on youth altruistic behavior development. Specifically, poor monitoring/supervision in grade 3 was positively associated with being in both the high-decreasing (b = 2.729) and moderate-increasing (b = 1.030) altruistic behavior latent trajectory classes versus the moderate-stable class.

Empathy. For the moderate-stable empathy trajectory class, the proportions of girls (57.4%) and White children (56.4%) were significantly higher compared to the moderate-decreasing and moderate-late decrease classes. Moreover, children in the moderate-stable class had the lowest levels of socio-demographic risk (M = 0.476), poor monitoring/supervision (M = 1.137), and community risk (M = 1.430) at grade 3. They also had the highest levels of positive parenting (M = 3.579), intergenerational closure (M = 3.202), child-centered social control (M = 4.229), and community access to resources (M = 2.786). In contrast, the moderate-decreasing class had the smallest proportion of girls (36.2%). Children in the moderate-decreasing class also had the highest levels of

household chaos (M = 2.241) and community risk (M = 1.705) in grade 3. Finally, for children in the moderate-late decrease class, household chaos in grade 3 (M = 2.125) was the lowest.

Individual, home, and parenting characteristics significantly predicted empathy trajectory class membership, while community characteristics did not. For example, compared to boys, girls were significantly less likely to be in the low-decreasing versus moderate-stable class (b = -1.035). Moreover, compared to Non-White children, White children were less likely to be in both the low-decreasing (b = -0.747) and moderate-late decrease (b = -1.007) classes versus the moderate-stable trajectory class. Socio-demographic risk in grade 3 was positively associated with being in the moderate-decreasing versus moderate-stable trajectory class (b = 0.468). Meanwhile, positive parenting in grade 3 was negatively associated with being in both the moderate-decreasing (b = -0.907) and moderate-late decrease (b = -1.226) trajectory classes versus the moderate-stable trajectory class. Thus, positive parenting appears to promote stable empathy trajectories.

Self-efficacy for peer interaction. For the moderate-stable class, the proportion of White children (50.5%) was greater than the low-late increase (38.5%) and moderate-late decrease (32.4%) trajectory classes. Socio-demographic risk (M = 0.552) and community risk (M = 1.481) in grade 3 were the lowest for the moderate-stable class, while intergenerational closure in grade 3 was the highest (M = 3.207). For the low-late increase class, child-centered social control at grade 3 was the lowest compared to the other classes (M = 3.942). Meanwhile, for the moderate-late decrease class, both poor monitoring/supervision (M = 1.183) and positive parenting (M = 3.583) at grade 3 were

the highest compared to the other classes. Among the ecological predictors assessed in this study, only intergenerational closure at grade 3 predicted self-efficacy for peer interaction trajectory class membership. Specifically, intergenerational closure was negatively associated with being in both the moderate-late decrease (b = -0.515) and low-late increase classes (b = -0.541) versus the moderate-stable class. Thus, intergenerational closure may promote stable trajectories of self-efficacy for peer interaction in children.

Normative beliefs about aggression. In the moderate-stable class, the proportion of girls (54.4%) and White children (48.8%) was significantly greater compared to the moderate-fast increase and high-increase-decrease classes. In addition, socio-demographic risk (M = 0.590), poor monitoring/supervision (M = 1.148), and community risk (M = 1.484) at grade 3 were lowest for the moderate-stable class compared to the other classes, while child-centered social control at grade 3 was highest (M = 4.133). In contrast to the moderate-stable class, socio-demographic risk at grade 3 was highest in the high-increase-decrease class (M = 0.904). In the multinomial regressions, some individual, home, and community characteristics predicted normative beliefs about aggression latent class trajectory membership. For example, children were less likely to be in the moderate-fast-increase class versus the moderate-stable class if they were female (b = -0.741) or White (b = -0.975). Similarly, children were less likely to be in the high-increase-decrease class versus the moderate-stable class if they were female (b = -1.205) or White (b = -0.649). Furthermore, socio-demographic risk (b = 0.384) and community risk (b = 0.318) at grade 3 were positively associated with being in the high-increase-decrease class versus the moderate-stable class. Adverse ecological contexts therefore appear to increase children's risk for negative social-emotional development.

ADHD-related behavior. The proportion of children who were White was greatest for the moderate-stable class (56.8%) compared to the moderate-increase-decrease (30.7%) and high-decreasing (37.3%) classes. Household chaos at grade 3 was also lowest in the moderate-stable class (M = 2.173), whereas it was highest in the high-decreasing class (M = 2.301). For the moderate-increase-decrease class, the proportion of children who were White was lowest (34.8%). There were no significant home, parental, or community predictors of ADHD-related behavior latent trajectory class membership, but there were individual predictors. For instance, compared to Non-White children, White children were more likely to be in the moderate-increase-decrease class versus the moderate-stable class (b = 0.847). Moreover, compared to boys, girls were more likely to be in the high-decreasing class versus moderate-stable class (b = 1.114).

3.4 Discussion

Using a large and diverse sample of youth, the present study sheds light on the development of social-emotional competence and behavior during the transition from middle to late childhood. The social-emotional outcomes we addressed included altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. Using growth mixture modeling (Muthén, 2004), we identified heterogeneous patterns of development spanning grades 3 to 5 for each of our social-emotional competence and behavior outcomes, as hypothesized. Moreover, we characterized the individuals that were categorized in these developmental trajectories based on their middle childhood home, parental, and community characteristics. Furthermore, we examined associations between children's ecological characteristics in grade 3 and their developmental trajectories of social-emotional outcomes from grades 3

through 5. As predicted, the findings suggest that ecological factors have specific influences on children's social-emotional development. Prior research has examined children's social-emotional development more globally by identifying trajectories spanning early childhood through adolescence (Harachi et al., 2006; Milan, Pinderhughes, & The Conduct Problems Prevention Research Group, 2006). Our study, however, advances the scientific literature by focusing on the transition between middle and late childhood, a developmental period for which little research is available (Côté et al., 2002; Jobe-Shields et al., 2011).

Altruistic Behavior Development

For the vast majority of children (73.3%), altruistic behavior was stable between middle and late childhood. Effective parenting (e.g., monitoring/supervision or positive parenting) was typically higher among children with a moderate-stable altruistic behavior trajectory. However, a substantial proportion of children (19.2%) exhibited a moderate-increasing trajectory of altruistic behavior. Interestingly, this group typically comprised those from less favorable ecological contexts. For example, socio-demographic and community risk were greater among these children while access to community resources was lower. Although prior research has generally shown that adverse living conditions predict negative behaviors, recent studies suggest that those from lower socioeconomic positions might demonstrate greater sensitivity to the needs of others, making them more likely to engage in pro-social behaviors than those from more favorable backgrounds (Kraus, Côté, & Keltner, 2010; Piff et al., 2010). Our study extends those findings to children. These individuals may also represent a distinct group of children who are resilient to their adverse contexts (Masten, 2001). Further research on their attitudes and

behaviors may provide insight into how we may foster resiliency among youth living in adversity.

For some children (7.5%), altruistic behavior followed a high-decreasing pattern, where initially high altruistic behavior gradually decreased over time, though their altruistic behavior still remained higher than average. Contrary to our expectations, some favorable ecological characteristics predicted children's likelihood of being in the high-decreasing versus moderate-stable trajectory group, including lower levels of household chaos and higher levels of positive parenting and community access to resources. Positive parenting, in particular, strongly predicted the likelihood that children would follow a decreasing trajectory of altruistic behavior. This association suggests that positive parenting during middle childhood may undermine children's intrinsic motivation for engaging in altruistic behavior (Henderlong & Lepper, 2002).

Empathy Development

Empathy remained stable between middle and late childhood for most youth (60.8%). However, we identified two trajectories of children with decreasing levels of empathy, including a moderate-decreasing group (21.6%) and a moderate-late decrease group (17.6%). The moderate-decreasing group showed a consistent decline in empathy between grades 3 and 5. For the moderate-late decrease group, however, empathy was initially comparable to children in the moderate-stable trajectory between third and fourth grade, but sharply declined from fourth grade through the end of fifth grade. Ecological contexts significantly differed between these empathy trajectory groups. For example, children in the moderate-stable group typically resided in more favorable home and community environments, whereas those in the moderate-decreasing group resided in less

favorable environments. Previous studies using variable-centered approaches have shown that parental warmth and expressivity predicted children's empathy (Zhou et al., 2002). Our person-centered analyses build upon prior research by illustrating the promotive effects of positive parenting on children's empathy development between middle and late childhood.

Self-Efficacy for Peer Interaction Development

Three trajectories emerged for self-efficacy for peer interaction. Most children followed a moderate-stable trajectory (66.5%). These individuals resided in home and community contexts with lower risk. The two remaining trajectories were characterized by initially stable levels of self-efficacy that diverged by either increasing or decreasing between fourth and fifth grade. Nearly 18% of children were in the low-late increase trajectory; these children initially had lower levels of self-efficacy that later increased. In contrast, almost 16% of children were in the moderate-late decrease group. Contrary to our expectations, we found that children with decreasing self-efficacy had caregivers who reported greater levels of positive parenting. In line with our results, an emerging body of research suggests that conventionally beneficial parenting styles and practices, such as giving children positive feedback for good behavior, may actually decrease their autonomy or increase their self-consciousness (Henderlong & Lepper, 2002; Kamins & Dweck, 1999). Thus, our study extends those findings by demonstrating the adverse effects of positive parenting on how children develop perceptions of their ability to navigate social situations with their peers over time.

In addition to parental characteristics, intergenerational closure also predicted children's self-efficacy for peer interaction trajectories. Specifically, as intergenerational

closure increased, children were significantly less likely to be in the increasing or decreasing self-efficacy trajectory groups compared to the moderate-stable groups, indicating that informal ties between neighbors promoted stable levels of self-efficacy among youth. Because intergenerational closure was significantly associated with either positive or negative self-efficacy trajectories among children, informal social ties may have both promotive and risk influences on their development. More research is needed to investigate the mechanisms that might explain how intergenerational closure could bolster or undermine children's self-efficacy. One consideration may concern the norms of the child's community (Morgan & Sørensen, 1999). It is possible that higher levels of intergenerational closure in communities may facilitate the perpetuation of norms concerning child autonomy, which might positively or negatively impact children's self-efficacy development.

Normative Beliefs about Aggression Development

The development of normative beliefs about aggression between middle and late childhood followed three trajectories: moderate-stable, moderate-fast increase, and high-increase-decrease. Most children followed moderate-stable trajectories of development for normative beliefs about aggression (86.1%). Meanwhile, the prevalence of those following moderate-fast increase and high-increase-decrease trajectories was similar (6.6% and 7.3%, respectively). Children in the high-increase-decrease trajectory group had higher initial levels of normative beliefs about aggression, which peaked at fourth grade but subsequently decreased; these children maintained higher levels of normative beliefs about aggression compared to those in the moderate-stable group. Few studies have investigated patterns of change in normative beliefs about aggression among youth.

Earlier work by Nash and Kim (2007) identified trajectory groups similar to those that emerged in our study, though their research followed individuals between adolescence and adulthood. Comparable to those in our moderate-stable group, roughly 75% of their sample followed low-stable or moderate-stable trajectories for beliefs legitimizing aggression (Nash & Kim, 2007). In addition, both of our studies identified high-decrease trajectory groups that comprised roughly 7% of individuals. Our work extends their efforts by identifying similar developmental subgroups among youth between middle and late childhood.

Home and community characteristics significantly influenced children's normative beliefs about aggression trajectories. For example, children in the moderate-stable group were from more favorable environments, characterized by low socio-demographic and community risk as well as greater child-centered social control. Meanwhile, greater levels of socio-demographic and community risk increased a child's likelihood of being in the high-increase-decrease versus moderate-stable trajectory group. These results were in line with social disorganization theory, which suggests that residing in high-risk home and neighborhood environments may lead children to develop maladaptive beliefs about aggression over time (Duncan & Raudenbush, 1999). As prior studies have shown that aggressive attitudes predicted violent behaviors in adolescence (Mcconville & Cornell, 2003), future prevention efforts must work towards mitigating the negative influence of home and community contexts on children's attitudes and beliefs about aggression, especially between middle and late childhood.

ADHD-related Behavior Development

Our results suggest that there is some heterogeneity in ADHD-related behavior development between middle and late childhood. Most children followed moderate-stable trajectories of ADHD-related behavior (77.2%), although a large proportion also comprised a moderate-increase-decrease trajectory class (15.2%). Among those in the moderate-increase-decrease trajectory class, ADHD-related behavior levels were initially moderate but increased over time, peaking at the start of fourth grade before decreasing while still maintaining the highest levels of ADHD-related behavior. In contrast, youth in the high-decreasing trajectory class (7.6%) showed greater initial levels of ADHD-related behavior that decreased over time. Contrary to our hypotheses, home, parental, and community characteristics did not predict trajectories for children's ADHD-related behaviors. Rather, demographic characteristics played a greater role. Specifically, compared to boys, girls were more likely to be in the high-decreasing versus moderate-stable trajectory class. Meanwhile, White children were more likely to be in the moderate-increase-decrease versus moderate-stable trajectory class. Although earlier studies using variable-centered approaches have shown that parental and neighborhood characteristics may influence youth self-control (Gibson, Sullivan, Jones, & Piquero, 2010; Pratt, Turner, & Piquero, 2004), the findings from our person-centered analyses suggested that contextual factors may play a smaller role in ADHD-related behavior development. Considering the significant associations between demographic characteristics and ADHD-related behavior development that we observed in our study, future research should investigate potential mechanisms linking gender and race/ethnicity to children's behavioral outcomes. Further exploration on the biological influences of

children's ADHD-related behavior development may also be warranted (Faraone et al., 2005).

Limitations

There are some limitations of the study to consider. We only examined social-emotional development between middle and late childhood. Although few studies have examined social-emotional development during this transition (Côté et al., 2002; Jobe-Shields et al., 2011), future research should investigate whether similar patterns of change that we observed in our social-emotional outcomes might emerge during early childhood or adolescence. Another limitation is that a few of the social-emotional competence measures we obtained were based on caregiver reports (e.g., altruistic behavior) or child self-reports (e.g., empathy, self-efficacy for peer interaction, and normative beliefs about aggression). It is possible that responses may be subjected to social desirability bias. However, this is a concern for many studies involving large samples and the confidential nature of the program may minimize such biases; furthermore, the measures had all been previously validated (Kaminski et al., 2009). Another limitation is that we did not examine an exhaustive list of ecological predictors and social-emotional outcomes. However, little research in the extant literature has examined the influence of a broad range of ecological risk and promotive factors on children's social-emotional development. Moreover, we focused on social-emotional competence outcomes that have been identified as crucial to the successful development of youth (Zins et al., 2007). Finally, although we assessed associations between middle childhood ecological factors and youth social-emotional development, this study did not account for their dynamic influences. Future studies should model how changes in

ecological contexts might affect children's developmental trajectories of social-emotional competence and behavior (Sameroff & MacKenzie, 2003).

3.5 Conclusion

The findings of this research further our knowledge of children's social-emotional development in many regards. First, this study identified the development of five key social-emotional outcomes: altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior (Zins et al., 2007). These dimensions of children's social-emotional competence and behavior represent antecedents to positive and negative mental health outcomes later in life (Ensminger et al., 2002). For all of these outcomes, most children followed moderate-stable trajectories of development. However, some children followed negative social-emotional development trajectories (e.g., declines in empathy or increases in normative beliefs about aggression). In contrast, other children followed positive social-emotional development trajectories (e.g., increasing altruistic behavior or declines in ADHD-related behavior). Beyond advancing our knowledge of competence and behavior trajectories, this study informs developmental theory by identifying the risk and promotive influences of ecological factors on children's social-emotional outcomes. The findings suggested that home, parental, and community characteristics may predict youth social-emotional development. For instance, unfavorable ecological factors (e.g., socio-demographic or community risk) may negatively influence children's aggression beliefs or disruptive behavior. Finally, our study highlights key home, parental, and community characteristics that play influential roles in children's social-emotional development. These contexts represent potential targets for prevention and intervention programs that may enhance

future efforts to foster healthy social-emotional development among children entering late childhood.

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Table 1

Growth Mixture Model Selection Indices

Latent classes	Parameters	AIC	BIC	ABIC	Entropy	LMR
Altruistic Behavior:						
2	53	13322.430	13626.593	13458.202	.652	<.001
3[a]	**67**	**13213.293**	**13597.801**	**13384.930**	**.730**	**.0765**
4	81	13162.905	13627.758	13370.406	.766	.7377
5	95	13118.748	13663.946	13362.113	.683	.3631
Empathy:						
2	53	7281.689	7585.852	7417.462	.612	<.001
3[a]	**67**	**7207.361**	**7591.869**	**7378.997**	**.580**	**.0309**
4	81	7060.975	7525.828	7268.476	.620	.3169
5	95	7014.603	7559.801	7257.968	.591	.4839
Self-efficacy for peer interaction:						
2	53	13485.043	13789.206	13620.816	.617	<.001
3[a]	**67**	**13353.584**	**13738.092**	**13525.221**	**.636**	**.1351**
4	81	13302.606	13767.459	13510.107	.660	.5717
5	95	13219.059	13764.257	13462.425	.675	.2410
Normative beliefs about aggression:						
2	53	10792.580	11096.743	10928.353	.925	.0626
3[a]	**67**	**10330.382**	**10714.890**	**10502.018**	**.891**	**.0040**
4	81	9557.572	10022.425	9765.073	.907	.2438
5	95	9334.932	9880.129	9578.297	.859	.2317
ADHD-related behavior:						
2	53	11849.349	12153.512	11985.121	.792	<.001
3[a]	**67**	**11426.751**	**11811.259**	**11598.387**	**.830**	**<.001**
4	81	11320.081	11784.934	11527.582	.818	.2029
5	95	11182.878	11728.076	11426.243	.783	.5384

Note. Bold indicates the selected solution. AIC = Akaike information criterion; BIC = Bayesian information criterion; ABIC = Sample-size adjusted Bayesian information criterion; LMR = Lo-Mendel-Rubin adjusted likelihood ratio test.

[a]$p < .001$ for Bootstrapped Likelihood Ratio Test; test favors 3 class solution over a 2 class solution.

Table 2

Growth Factors for Latent Trajectory Class

Latent class	Proportion (%)	Intercept	Linear Slope	Quadratic Slope
Altruistic behavior				
Moderate-stable (Class 1)	73.3	2.134***	-0.121***	0.018***
High-decreasing (Class 2)	7.5	3.357***	-0.354	0.041
Moderate-increasing (Class 3)	19.2	2.428***	0.438***	-0.063*
Empathy				
Moderate-stable (Class 1)	60.8	2.443***	-0.010	-0.002***
Moderate-decreasing (Class 2)	21.6	2.298***	-0.409***	0.057***
Moderate-late decrease (Class 3)	17.6	2.462***	0.000*	-0.030*
Self-efficacy for peer interaction				
Low-late increase (Class 1)	17.8	2.695***	-0.274***	0.071***
Moderate-stable (Class 2)	66.5	3.017***	0.261***	-0.031***
Moderate-late decrease (Class 3)	15.7	2.892***	0.121	-0.046*
Normative beliefs about aggression				
Moderate-fast increase (Class 1)	6.6	1.238***	-0.036***	0.082***
Moderate-stable (Class 2)	86.1	1.202***	-0.022	0.007**
High-increase-decrease (Class 3)	7.3	1.619***	0.806***	-0.138***
ADHD-related behavior				
Moderate-increase-decrease (Class 1)	15.2	1.913***	0.558***	-0.091***
High-decreasing (Class 2)	7.6	2.903***	-0.444***	0.055***
Moderate-stable (Class 3)	77.2	1.549***	-0.036***	0.006***

*$p < .05$; **$p < .01$; ***$p < .001$

Table 3

Influence of Individual and Ecological Predictors on Latent Trajectory Class Growth Factors

Outcome:	Altruistic behavior	Empathy	Self-efficacy for peer interaction	Normative beliefs about aggression	ADHD-related behavior
Intercept					
Female	0.110***	0.092***	-0.111***	-0.078***	-0.222***
White	-0.188***	0.029	0.028	-0.044*	-0.145***
Socio-demographic risk (G3)	0.059**	-0.013	0.017	-0.014	0.011
Household chaos (G3)	-0.031	-0.002	-0.013	0.041*	0.037
Poor monitoring/supervision (G3)	0.140	-0.056	-0.074	0.018	0.011
Positive parenting (G3)	0.138**	0.034	0.100**	0.016	0.029
Intergenerational closure (G3)	0.105**	0.006	0.014	0.005	0.016
Child-centered social control (G3)	0.038	0.005	-0.011	-0.001	0.031
Community access to resources (G3)	-0.017	-0.005	0.027	-0.014	-0.028
Community risk (G3)	0.139***	-0.024	-0.016	0.033*	0.094***

(continued)

(continued)

Outcome:	Altruistic behavior	Empathy	Self-efficacy for peer interaction	Normative beliefs about aggression	ADHD-related behavior
Linear Slope					
Female	-0.036	-0.029	-0.037	0.007	0.006
White	0.112**	-0.004	-0.017	-0.007	0.049*
Socio-demographic risk (G3)	-0.015	0.016	0.005	0.021	0.023
Household chaos (G3)	0.032	0.007	-0.002	-0.005	0.000
Poor monitoring/supervision (G3)	-0.147	0.064	0.094	-0.092*	-0.006
Positive parenting (G3)	-0.021	-0.021	-0.035	-0.009	-0.024
Intergenerational closure (G3)	-0.022	0.000	-0.015	-0.006	-0.023
Child-centered social control (G3)	-0.015	-0.009	-0.022	0.006	-0.009
Community access to resources (G3)	-0.004	-0.009	-0.006	0.007	-0.010
Community risk (G3)	-0.048	-0.013	0.027	-0.001	-0.031

(continued)

(continued)

Outcome:	Altruistic behavior	Empathy	Self-efficacy for peer interaction	Normative beliefs about aggression	ADHD-related behavior
Quadratic Slope					
Female	0.004	0.006	0.007	-0.002	-0.002
White	-0.018**	0.002	-0.002	0.000	-0.008
Socio-demographic risk (G3)	0.004	0.000	-0.004	-0.002	-0.004
Household chaos (G3)	-0.005	-0.003	0.001	-0.001	0.000
Poor monitoring/supervision (G3)	0.027	-0.009	-0.015	0.023*	0.001
Positive parenting (G3)	0.006	-0.001	0.004	0.001	0.003
Intergenerational closure (G3)	0.005	0.002	0.004	0.001	0.003
Child-centered social control (G3)	0.004	0.002	0.004	-0.004	0.003
Community access to resources (G3)	0.000	0.002	0.001	-0.002	0.002
Community risk (G3)	0.011*	0.002	-0.003	-0.003	0.006

Note. G3 = Grade 3

*$p < .05$; **$p < .01$; ***$p < .001$

Table 4

Proportion or Mean of Predictor Characteristics within Latent Trajectory Class

Predictor	Latent Trajectory Class		
Altruistic behavior:	Moderate-stable (C1)	High-decreasing (C2)	Moderate-increasing (C3)
Female	49.7%	49.8%	58.3%$_{a}$
White	51.8%	58.9%	16.1%$_{a,b}$
Socio-demographic risk (G3)	0.560	0.664	0.847$_{a,b}$
Household chaos (G3)	2.205	1.998$_{a}$	2.181$_{b}$
Poor monitoring/supervision (G3)	1.139	1.215$_{a}$	1.186$_{a}$
Positive parenting (G3)	3.497	3.809$_{a}$	3.545$_{a,b}$
Intergenerational closure (G3)	3.153	3.319$_{a}$	2.920$_{a,b}$
Child-centered social control (G3)	4.138	4.338$_{a}$	3.987$_{a,b}$
Community access to resources (G3)	2.718	2.986$_{a}$	2.646$_{a,b}$
Community risk (G3)	1.479	1.347$_{a}$	1.751$_{a,b}$
Empathy:	Moderate-stable (C1)	Moderate-decreasing (C2)	Moderate-late decrease (C3)
Female	57.4%	36.2%$_{a}$	49.1%$_{a,b}$
White	56.4%	30.7%$_{a}$	25.9%$_{a}$
Socio-demographic risk (G3)	0.476	0.830$_{a}$	0.877$_{a}$
Household chaos (G3)	2.183	2.241$_{a}$	2.125$_{a,b}$
Poor monitoring/supervision (G3)	1.137	1.189$_{a}$	1.169$_{a}$
Positive parenting (G3)	3.579	3.458$_{a}$	3.446$_{a}$
Intergenerational closure (G3)	3.202	2.992$_{a}$	2.997$_{a}$
Child-centered social control (G3)	4.229	3.903$_{a}$	3.933$_{a}$
Community access to resources (G3)	2.786	2.606$_{a}$	2.656$_{a}$
Community risk (G3)	1.430	1.705$_{a}$	1.614$_{a,b}$

(continued)

(continued)

Predictor	Latent Trajectory Class		
Self-efficacy for peer interaction:	Low-late increase (C1)	Moderate-stable (C2)	Moderate-late decrease (C3)
Female	50.3%	51.1%	53.7%
White	38.5%	50.5%$_{a}$	32.4%$_{b}$
Socio-demographic risk (G3)	0.802	0.552$_{a}$	0.720$_{b}$
Household chaos (G3)	2.148	2.192	2.197
Poor monitoring/supervision (G3)	1.154	1.147	1.183$_{a,b}$
Positive parenting (G3)	3.520	3.519	3.583$_{a,b}$
Intergenerational closure (G3)	2.919	3.207$_{a}$	2.985$_{b}$
Child-centered social control (G3)	3.942	4.157$_{a}$	4.079$_{a}$
Community access to resources (G3)	2.634	2.753$_{a}$	2.704
Community risk (G3)	1.585	1.481$_{a}$	1.620$_{b}$
Normative beliefs about aggression:	Moderate-fast increase (C1)	Moderate-stable (C2)	High-increase-decrease (C3)
Female	37.8%	54.4%$_{a}$	27.7%$_{b}$
White	23.3%	48.8%$_{a}$	26.8%$_{b}$
Socio-demographic risk (G3)	0.735	0.590$_{a}$	0.904$_{a,b}$
Household chaos (G3)	2.198	2.185	2.170
Poor monitoring/supervision (G3)	1.182	1.148$_{a}$	1.196$_{b}$
Positive parenting (G3)	3.533	3.528	3.538
Intergenerational closure (G3)	2.943	3.137$_{a}$	3.087
Child-centered social control (G3)	3.909	4.133$_{a}$	3.977$_{b}$
Community access to resources (G3)	2.649	2.730	2.724
Community risk (G3)	1.775	1.484$_{a}$	1.736$_{b}$

(continued)

(continued)

Predictor	Latent Trajectory Class		
ADHD-related behavior:	Moderate-increase-decrease (C1)	High-decreasing (C2)	Moderate-stable (C3)
Female	30.7%	37.3%	56.8%$_{a,b}$
White	34.8%	52.3%$_{a}$	47.0%$_{a}$
Socio-demographic risk (G3)	0.723	0.700	0.595$_{a}$
Household chaos (G3)	2.190	2.301$_{a}$	2.173$_{b}$
Poor monitoring/supervision (G3)	1.189	1.164	1.146$_{a}$
Positive parenting (G3)	3.554	3.485	3.529
Intergenerational closure (G3)	3.087	3.060	3.133
Child-centered social control (G3)	4.027	4.096	4.123$_{a}$
Community access to resources (G3)	2.714	2.677	2.731
Community risk (G3)	1.608	1.547	1.502$_{a}$

Note. G3 = Grade 3; C1 = Class 1; C2 = Class 2; C3 = Class 3

$_{a}$ $p < .05$ significant difference compared to C1

$_{b}$ $p < .05$ significant difference compared to C2

Table 5

Multinomial Regression Coefficient Estimates between Individual and Ecological Predictors and Latent Trajectory Class Membership

Outcome:	Altruistic behavior	Empathy	Self-efficacy for peer interaction	Normative beliefs about aggression	ADHD-related Behavior
Reference class: Moderate-stable	High-decreasing	Moderate-decreasing	Moderate-late decrease	Moderate-fast increase	Moderate-increase-decrease
Predictor	(C2)	(C2)	(C3)	(C1)	(C1)
Female	0.027	-1.035***	0.101	-0.741**	0.322
White	0.721	-0.747**	-0.528	-0.975**	0.847*
Socio-demographic risk (G3)	0.414	0.468*	0.056	-0.099	0.192
Household chaos (G3)	-0.875*	-0.074	0.056	0.001	0.436
Poor monitoring/supervision (G3)	2.729*	0.311	0.717	0.374	-0.766
Positive parenting (G3)	3.413***	-0.907*	0.517	0.076	-0.328
Intergenerational closure (G3)	-0.030	0.185	-0.515*	-0.057	-0.277
Child-centered social control (G3)	-0.049	-0.299	0.311	-0.015	0.236
Community access to resources (G3)	0.497*	-0.176	0.027	-0.044	-0.043
Community risk (G3)	-0.394	0.151	0.097	0.351	0.079

(continued)

(continued)

Outcome:	Altruistic behavior	Empathy	Self-efficacy for peer interaction	Normative beliefs about aggression	ADHD-related Behavior
Reference class: Moderate-stable	Moderate-increasing	Moderate-late decrease	Low-late increase	High-increase-decrease	High-decreasing
Predictor	(C3)	(C3)	(C1)	(C3)	(C2)
Female	0.346	-0.534	-0.091	-1.209***	1.114***
White	-1.473***	-1.007**	-0.011	-0.649*	0.413
Socio-demographic risk (G3)	0.074	0.581	0.368	0.384*	-0.098
Household chaos (G3)	-0.121	-0.723	-0.425	-0.173	-0.067
Poor monitoring/supervision (G3)	1.030*	-0.029	-0.115	0.548	-0.749
Positive parenting (G3)	0.344	-1.226*	-0.035	-0.008	-0.247
Intergenerational closure (G3)	-0.105	0.134	-0.541*	0.311	-0.112
Child-centered social control (G3)	0.025	-0.301	-0.054	-0.113	0.148
Community access to resources (G3)	-0.002	-0.103	-0.036	0.073	-0.048
Community risk (G3)	0.153	-0.102	-0.125	0.318*	-0.037

Note. G3 = Grade 3; C1 = Class 1; C2 = Class 2; C3 = Class 3

*$p < .05$; **$p < .01$; ***$p < .001$

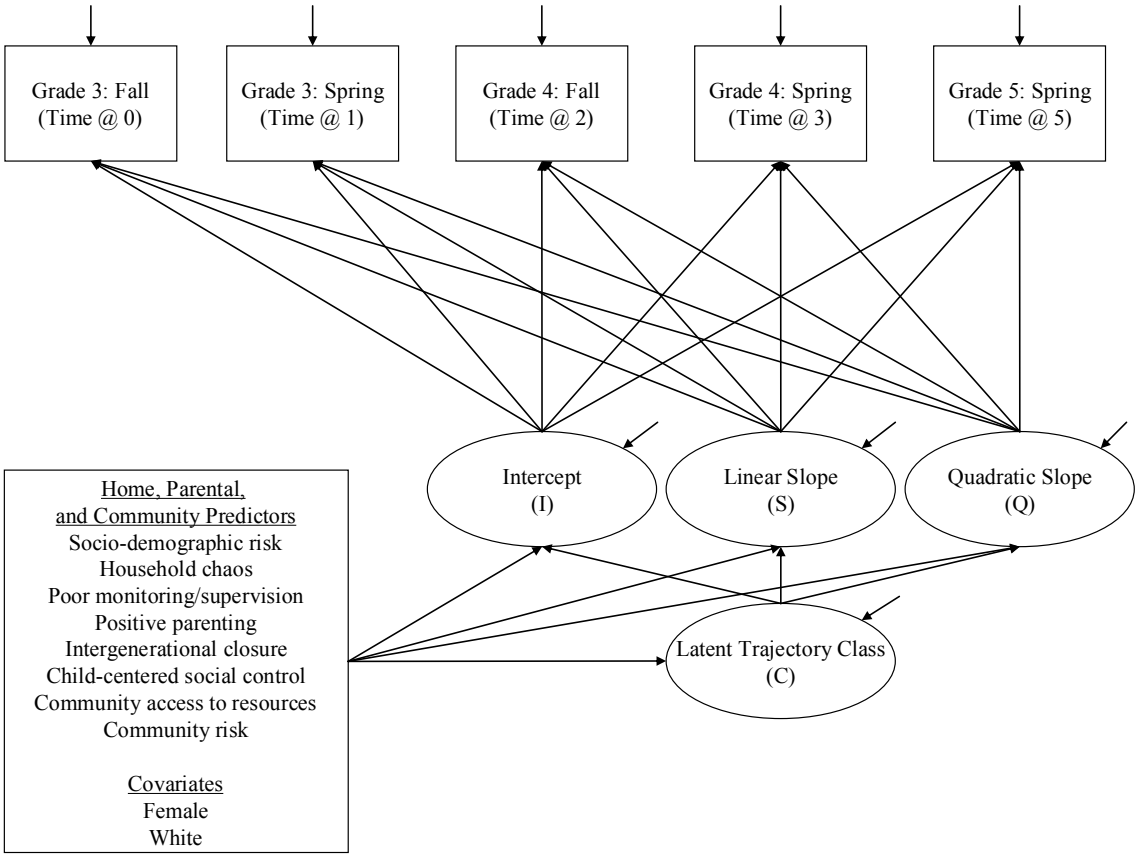
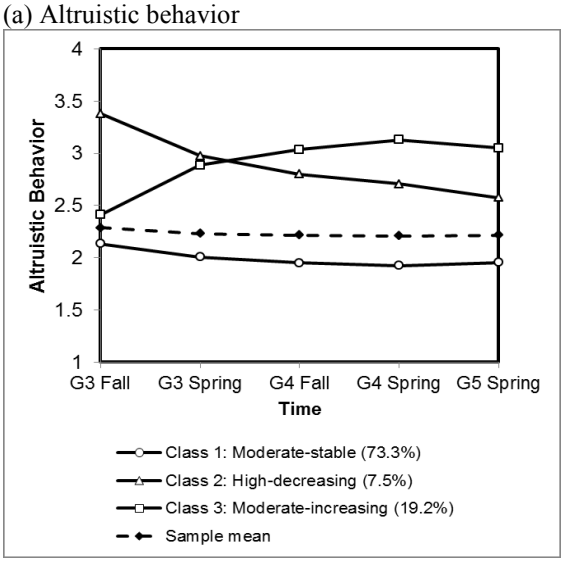
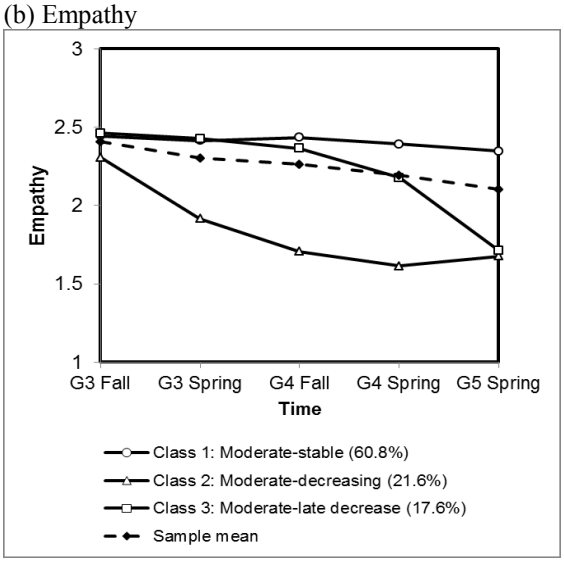


Figure 1. Hypothesized growth mixture model.

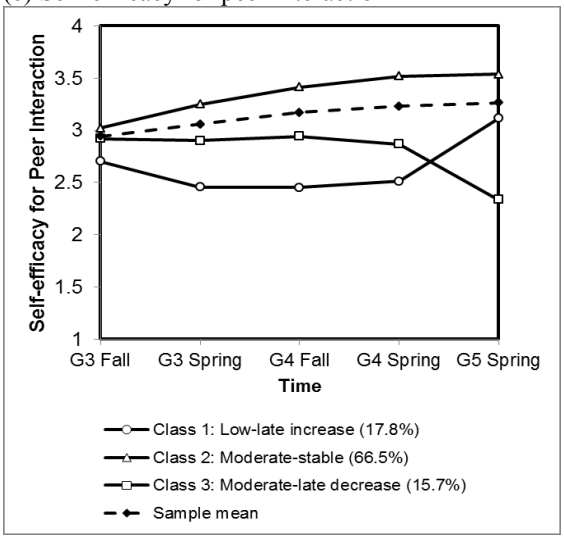
(a) Altruistic behavior



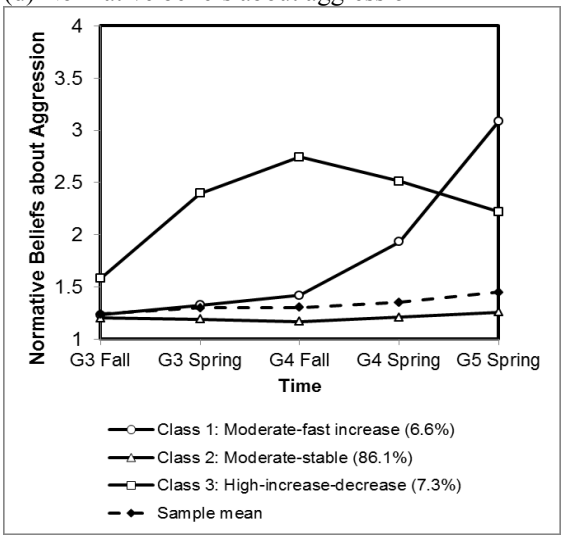
(b) Empathy



(c) Self-efficacy for peer interaction



(d) Normative beliefs about aggression



(e) ADHD-related behavior

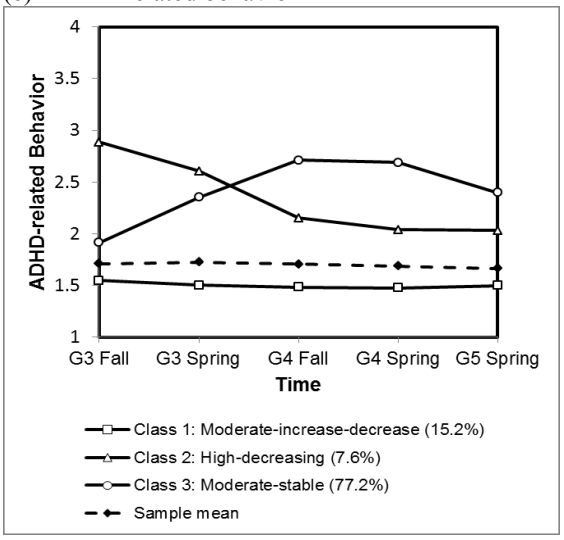


Figure 2. Latent class trajectories of social-emotional competence and behavior

CHAPTER 4.

ECOLOGICAL PREDICTORS AND BEHAVIORAL OUTCOMES OF CHILDREN'S SOCIAL-EMOTIONAL COMPETENCE PROFILES

Abstract

Children's social-emotional competence represents a key antecedent to later developmental outcomes. However, little is known about the heterogeneity of children's social-emotional competence and behavior between middle and late childhood. To address these gaps, we investigated whether children may be distinguished according to social-emotional competence profiles and the influence of ecological predictors. We also assessed associations between children's social-emotional competence profiles and distal behavior outcomes. Data from the Social and Character Development Program were analyzed, which included nearly 3,200 students in grades 3 to 5. Latent profile analyses were used to identify children's social-emotional competence profiles and their associations with ecological predictors and behavioral outcomes across grades 3 to 5. Three social-emotional competence profiles emerged: normative, maladaptive, and antisocial. Home, parental, and community characteristics also influenced children's profiles of social-emotional competence, particularly between grades 3 and 4. Children's social-emotional competence profiles also predicted later behavioral outcomes such that antisocial children exhibited the lowest level of positive behaviors and highest level of problem behaviors. The findings illustrate the extent of variation in children's social-emotional competence between middle and late childhood. Prevention efforts may be tailored to children based on their social-emotional competence profile. Targeted efforts should also address ecological contexts during this developmental period.

4.1 Introduction

Researchers have described "competence" as one's ability to successfully adapt to their environment through the accomplishment of key developmental tasks with respect to their age and gender, as defined by cultural and societal norms (Masten & Coatsworth, 1998). As youth enter middle childhood, their developmental tasks encompass navigating their social environment through engagement with their family, teachers, and peers. Thus, they require social-emotional competence skills that would allow them to engage in positive interactions with others, form relationships, control impulses, identify and regulate personal emotions, understand and respond accordingly to others' emotions and behaviors, and recognize their own strengths and limitations (Zins, Bloodworth, Weissberg, & Walberg, 2007). Studies have shown that children with deficits in these skills are more likely to exhibit social, emotional, and behavioral problems (Frey, Nolen, Van Schoiack Edstrom & Hirschstein, 2005; Webster-Stratton & Reid, 2003; Webster-Stratton, Reid, & Stoolmiller, 2008). Despite the importance of social-emotional competence, little is known about its development between middle and late childhood. Therefore, this study explores whether children may be distinguished by profiles of social-emotional competence, and assesses their associations with ecological predictors and behavioral outcomes.

Ecological Predictors of Social-Emotional Competence and Behavior

According to developmental theory (Sroufe et al., 2005), one's individual qualities and experiences may impact and shape their life outcomes. These qualities and experiences may be characterized as risk, promotive, protective, or vulnerability factors, which determine the processes that shape one's outcomes (Gutman, Sameroff, & Cole,

2003). For example, risk and promotive factors directly affect individual outcomes, whereas protective and vulnerability factors influence the impact of experiences on outcomes. Meanwhile, the ecological model (Bronfenbrenner & Morris, 1998) suggests that influential factors that affect one's developmental outcomes stem from multiple contexts, such as the home, family, or community. Drawing upon both developmental and ecological frameworks affords us an integrative perspective for studying children's social-emotional competence.

Studies have widely shown that home, parental, and community environments represent multidimensional contexts (Shelton, Frick, & Wootton, 1996; Wolkow & Ferguson, 2001). However, few studies have sought to determine how multiple ecological factors may simultaneously influence children's social, emotional, and behavioral outcomes (Grusec & Davidov, 2010). Most research to date has focused on school and classroom characteristics. Comparatively fewer studies have explored the impact of home, parental, and community characteristics (Hoglund & Leadbeater, 2004; Pratt, Turner, & Piquero, 2004). Determining the influence of specific ecological predictors on children's social-emotional competence is crucial for developing targeted intervention programs. Thus, we consider the potential influences of specific predictors from home, parental, and community ecological domains.

Home. Children's home environments play a central role in their social, emotional, and behavioral development (Conger et al., 1999; McLeod & Nonnemaker, 2000). According to the family stress model, home environments with greater levels of economic pressure may adversely impact children's self-efficacy and control beliefs, which could in turn lead to emotional distress during adolescence (Ackerman, Brown, &

Izard, 2004; Conger, Rueter, & Conger, 2000). Less is known about the impact of socio-demographic risk, as measured by indicators such as residing in a home that is managed by a single parent, household poverty, or low caregiver educational attainment (Evans, 2004). Most studies concerning socio-demographic risk influences have been cross-sectional (Chen, Matthews, & Boyce, 2002), highlighting the need to examine their longitudinal impacts on children's social-emotional competence. Meanwhile, a growing body of research has begun to focus on the consequences associated with household chaos, which has been defined as homes with high levels of noise, crowding, and situational traffic patterns (Mattheny, Wachs, Ludwig, & Phillips, 1995). Some studies have identified associations between household chaos and poor self-regulation or psychological distress (Deater-Deckard et al., 2009; Evans et al., 2005). However, more longitudinal research is needed to understand its effect on children's social-emotional outcomes.

Parental. Numerous studies have shown that parenting plays an important role in children's social, emotional, and behavioral development. According to the developmental model of antisocial behavior (Patterson, DeBaryshe, & Ramsey, 1989), ineffective parenting practices may lead to negative outcomes in children. The influence of parential monitoring and control, in particular, has been widely reported in the scientific literature (Kerr & Stattin, 2000; Pettit, Laird, Dodge, Bates, & Criss, 2001). In contrast to studies concerning ineffective parenting, positive youth development research has sought to highlight how parenting may have promotive influences on children's social-emotional outcomes (Bor, Sanders, & Markie-Dadds, 2002; Masten, 2001). Despite the extant research, many studies have been limited by evaluating parenting as a

global, one-dimensional, construct with positive and negative practices as part of the same spectrum (Masten, 2001). Although some studies have recognized the multidimensional nature of parenting, many have examined the effects of positive and negative practices separately. Taken together, more research is needed to examine the influence of multiple dimensions of parenting on children's social-emotional competence (Cowan, Cowan, & Schulz, 1996; Prevatt, 2003).

Community. A growing body of research has begun to illustrate how community factors may influence children's social, emotional, and behavioral outcomes. According to social disorganization theory, residential efforts to supervise and control youth (e.g., child-centered social control), as well as informal ties between residents (e.g., intergenerational closure), can influence children's behavioral outcomes (Sampson & Groves, 1989); this theory has received substantial empirical support (Sampson, Morenoff, & Gannon-Rowley, 2002). Alternatively, institutional and epidemic or contagion models have posited that physical dimensions of the community may influence children's development (Duncan & Raudenbush, 2001; Jencks & Mayer, 1990). For example, institutional models suggest that children with greater access to parks, libraries, community centers, and youth programs gain more exposure to enriching activities that bolster their social-emotional development (Chase-Lansdale et al. 1997). Meanwhile, epidemic or contagion models emphasize how community risk factors (e.g., violence or gang activity) may increase children's risk for negative behaviors via social learning (Guerra, Huesmann, & Spindler, 2003; Ingoldsby & Shaw, 2002; Osofsky, 1995). While many studies have examined the effects of these community characteristics individually, more research is needed to assess their simultaneous influences.

Profiles of Social-Emotional Competence among Children

Research has widely established that children's social-emotional competence represents a key antecedent to psychopathology and other negative outcomes later in life (Ensminger, Juon, & Fothergill, 2002; Loeber & Farrington, 2000). Meanwhile, many studies using variable-centered analytic approaches have shed light on the ecological predictors that may influence children's social-emotional competence. However, variable-centered approaches are limited, as they assume that populations are homogeneous and that the effects of predictors are equal for all individuals (Muthén & Muthén, 2000). As such, a key gap in our understanding concerns whether children may be heterogeneous with regard to their social-emotional competence. Prior research suggests that children may differ based on their social-cognition and information-processing (Crick & Dodge, 1994; Masten et al., 1999). Yet, there has been little research concerning whether children may be distinguished based on their profiles of social-emotional competence (Sharp, Croudace, & Goodyer, 2007). Determining whether children may be classified into subtypes based on their profiles of social-emotional competence will be instrumental in developing targeted prevention efforts (Magnusson & Cairns, 1996).

In contrast to variable-centered analytic approaches, person-centered analyses may be used to identify subgroups of children based on their patterns of social-emotional competence (Bergman & Andersson, 2010). Rather than conceptualizing variables as predictors and outcomes, person-centered approaches use variables to represent indicators of one's characteristics, which are used to identify distinct subgroups of individuals based on a set of these characteristics. Thus, person-centered approaches account for

heterogeneity in populations (Molenaar & Campbell, 2009). In earlier studies, researchers have typically used cutoff scores to classify individuals based on their social, emotional, and behavioral characteristics (Hawley, 2003; Masten et al., 1999; Vitaro, Gendreau, Tremblay, & Oligny, 1998). However, these approaches suffer from several limitations. Research suggests that using previously defined cutoffs for measures may limit the flexibility required to detect meaningful subgroups within a population (Storr, Reboussin, & Anthony, 2005). Moreover, some cutoffs may be arbitrarily defined, which could lead to measurement error (e.g., false positives or negatives). This may yield inaccurate prevalence estimates for subgroups. It might also undermine the ability to detect associations between group membership and predictors and outcomes.

As alternatives to using cutoffs, latent class analysis (LCA) and latent profile analysis (LPA) also represent person-centered approaches that may be used in developmental research, which are are similar to cluster analyses (McCutcheon, 1987; Muthén & Muthén, 2000). These approaches assume that an underlying categorical latent variable determines an individual's class or profile membership. LCA is employed when binary indicators are used to measure the latent variable, whereas LPA is used when analyses involve continuous indicators (Muthén & Muthén, 2000). One advantage of LCA/LPA is their use of exploratory, multivariate, probabilistic, approaches to examine observed response patterns and identify class or profile subgroups, as opposed to using standardized variables with pre-determined cutoffs (McCutcheon, 1987). Moreover, LCA/LPA models provide statistical fit indices (Muthén & Muthén, 2000). As part of an iterative process, LCA/LPA entails fitting models with differing numbers of classes sequentially. We may then select the final appropriate model using estimated fit indices

together with substantive interpretations of model results that are grounded in theory or empirical research (Nylund, Asparouhov, & Muthén, 2007). Another advantage of LCA and LPA is that predictors, as well as distal outcomes, may be included in the model. Testing their associations with predictors and outcomes will thus enable us to assess the validity of the social-emotional competence classes or profiles that were identified in the analyses. Furthermore, we may assess which ecological predictors had stronger influences on the determination of children's social-emotional competence profiles to guide intervention strategies.

Overview of the Current Study

The current study addresses gaps in prior research by identifying variation in youth social-emotional competence between middle and late childhood, as well as the influence of ecological predictors. Specifically, we first aimed to determine whether children may be distinguished based on profiles of social-emotional competence between grades 3 and 5 using LPA. In line with research that has highlighted key social-emotional competence measures (Zins et al., 2009), our latent profile indicators included altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. Considering how competence is conceptually linked to children's adaptation to their environment (Masten & Coatsworth, 1998), we also aimed to assess the influence of concurrent home, parental, and community characteristics on children's social-emotional competence profiles. These ecological predictors included socio-demographic risk, household chaos, poor parental monitoring/supervision, positive parenting, intergenerational closure, child-centered social control, community access to resources, and community risk. Finally, we aimed to determine the validity of the social-

emotional competence profiles identified in our analyses by examining their associations with distal behavioral outcomes, such as positive or problem behaviors.

We hypothesized that subgroups of children with distinct social-emotional competence profiles would emerge. In particular, prior research suggests that most children would exhibit a profile with favorable scores on our selected social-emotional competence indicators; these children might represent the normative group. In contrast, a smaller group might exhibit a profile with unfavorable scores on the selected indicators (Moffitt, 2006); these children might comprise a maladaptive or antisocial group. Guided by developmental (Sroufe et al., 2005) and ecological perspectives (Bronfenbrenner & Morris, 1998), we also hypothesized that home, parental, and community characteristics would influence children's social-emotional competence profiles. The effects of these predictors may also vary as children transition from middle to late childhood. Lastly, we hypothesized that children's social-emotional competence profiles would predict later behavioral outcomes. Namely, children with maladaptive or antisocial profiles would exhibit higher levels of problem behaviors and lower levels of positive behaviors.

4.2 Method

Participants

The data for this study were obtained from the Social and Character Development (SACD) Research Program. The program was a joint effort between the Institute of Education Sciences (IES), the Division of Violence Prevention in the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC), and Mathematica Policy Research Institute. The SACD Program was a large-scale, multi-site, randomized trial of seven different elementary school-based intervention programs

for bolstering children's social, emotional, and academic outcomes. The agencies and institutions involved with the SACD Program formed the Social and Character Development Program Research Consortium (SACDRC, 2010). The analytic sample for this study involved roughly 3,100 control students from the randomized trial. We excluded approximately 3,400 students who were assigned to the intervention condition due to potential program effects on the primary outcomes of our study. The sample included mostly females (51.7%) and was racially/ethnically diverse (41.6% White, 31.0% Black, 20.2% Hispanic/Latino, 7.2% Other). The mean age of the sample at grade 3 was 8.6 years (*SD* = .46).

Procedure

The SACDRC collected data from nearly 100 schools involving two cohorts of students in grades 3 to 5. The Public/Private Ventures Institutional Review Board in addition to the institutional review boards at each participating institution approved the consent process and other procedures concerning human subjects for this study. Primary caregivers and teachers provided written consent. Roughly 65% of primary caregivers agreed to having their child and their child's teacher participate in the survey administration. Among those who consented to participate, 94% of the child surveys and 96% of the teacher surveys were completed. Roughly 63% of primary caregivers consented to their own participation in the survey administration and 92% of these individuals returned completed surveys. For the first cohort, data were collected from roughly 2,800 control students over five waves (fall 2004, spring 2005, fall 2005, spring 2006, and spring 2007). For the second cohort, data were collected from nearly 300 control students over three waves (fall 2005, spring 2006, and spring 2007).

Measures

The SACDRC used standardized collection procedures to obtain data from students, caregivers, and teachers. For each data collection, students as well as their teachers and parents completed a core set of instruments that assessed the social, emotional, behavioral, and academic outcomes. Although the psychometric properties of the core instruments were previously established, the SACDRC derived more valid and optimal scales measures for the sample using exploratory and confirmatory factor analytic approaches (Kaminski, David-Ferdon, & Battistich, 2009). The SACDRC-derived measures were found to have improved psychometric properties, as the measures had greater internal consistency, were more reliable across waves as well as demographic and geographic subgroups (Kaminski et al., 2009). Multi-trait multi-respondent analyses also showed that the same constructs assessed using different informants were correlated, which demonstrated the validity of the derived measures (Kaminski et al., 2009). Accordingly, the analyses for the current study used the SACDRC-derived measures.

Social-Emotional Competence Profile Indicators

Altruistic behavior. The Altruism Scale (primary caregiver version; Solomon, Battistich, Watson, Schaps, & Lewis, 2000) was used to assess students' altruistic behavior. Parents reported on this 8-item measure how frequently their child helped others in various circumstances (e.g., when seeing that others were hurt or sad). Primary caregivers reported the frequency on a 4-point scale ranging from "never" to "many times." This measure has demonstrated excellent internal consistency ($\alpha = .88$).

Empathy. Students completed the Children's Empathy Questionnaire (Funk et al., 2003), on which they reported on a 3-point scale (e.g., "yes," "sometimes," or "no")

whether they would feel bad, happy, or bothered during specific events (e.g., when a friend gets a good grade or when seeing another kid cry). This measure comprised 11 items (α = .78).

Self-efficacy for peer interaction. The Self-Efficacy for Peer Interaction Scale (Wheeler & Ladd, 1982) was used to measure children's abilities to navigate certain social situations (e.g., when a peer cuts in front of them in line or another child is yelling at them). Students reported the level of difficulty for them to respond to these scenarios on a 4-point scale ranging from "REALLY EASY!" to "REALLY HARD!" The measure included 12 items (α = .83).

Normative beliefs about aggression. The Normative Beliefs about Aggression Scale (Huesmann & Guerra, 1997) was used to assess students' attitudes toward aggressive behavior. Students responded on a 4-point scale ranging from "really wrong" to "perfectly OK" how they felt about behaving aggressively, particularly to achieve certain goals or respond to specific situations (e.g., "it is wrong to hit other people" or "it is wrong to take it out on others by saying mean things when you're mad"). This measure comprised eight items (α = .83).

ADHD-related behavior. Teachers completed a 10-item measure based on *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 2000) and a shortened version of the Iowa Conners Teacher Rating Scale (Pelham, Milich, Murphy, & Murphy, 1989). On a 4-point scale ranging from "never" to "always," teachers reported how frequently a student displayed inattentive or hyperactive behaviors, which included making noises or having difficulties with organizing tasks and activities. This measure has demonstrated excellent internal consistency (α = .91).

Ecological Predictors

Socio-demographic risk. Primary caregivers completed a 3-item measure asking about social risk factors that were present in the child's home. Namely, the measure asked whether the household that the child resided in was managed by a single-parent or low-income (below 135% of the poverty level). It also asked whether the child's primary caregiver graduated from high school. Students received a score ranging from 0 to 2 according to whether they had no risk factors, one risk factor, or two to three risk factors. The test-retest reliability for the measure was acceptable (.79).

Household chaos. The 14-item Confusion, Hubbub, and Order Scale (CHAOS; Matheny et al., 1995) was used to assess household chaos. Primary caregivers were presented with statements about environmental confusion or chaos in their home (e.g., there was often a fuss going on or family plans usually do not seem to work out), to which they responded whether they "strongly disagree" or "strongly agree" on a 5-point Likert scale. This measure had acceptable internal consistency ($\alpha = .79$) and test-retest reliability (.74).

Poor monitoring and supervision. Primary caregivers completed the Monitoring/Supervision subscale of the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996), which asked caregivers to report how frequently they monitored, supervised, or were aware of their children's activities (e.g., setting a time for their child to be home or checking that their child came home from school). Caregivers responded on a 4-point scale ranging from "never" to "almost always." This measure included 10 items ($\alpha = .75$).

Positive parenting. Primary caregivers completed the Positive Parenting subscale of the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996), which asked caregivers to report how frequently they reinforced the positive behaviors of their children (e.g., complimenting or hugging their child when they did something well). Caregivers responded on a 4-point scale ranging from "never" to "almost always." This measure included six items ($\alpha = .85$).

Intergenerational closure. The Intergenerational Closure Scale (Sampson, Morenoff, & Earls, 1999) was administered to primary caregivers, who reported how much statements described their neighborhood's social ties (e.g., parents in the neighborhood knew their children's friends or there were adults in the neighborhood that kids could look up to). Caregivers responded on a 4-point scale ranging from "not at all" to "a lot." This measure comprised three items ($\alpha = .72$).

Child-centered social control. The Child-Centered Social Control Scale (Sampson, Morenoff, & Earls, 1999) was administered to primary caregivers, who reported how likely they believed neighbors could be counted on to do something in certain events (e.g., when children were caught skipping school and hanging out on a street corner or were showing disrespect to an adult). Caregivers responded on a 5-point scale ranging from "very unlikely" to "very likely." This measure comprised five items ($\alpha = .72$).

Community access to resources. Primary caregivers reported on a 5-item measure how much statements described their neighborhood's availability of resources (e.g., presence of libraries for families or safe outdoor parks for children to play). Their responses were reported on a 4-point scale ranging from "not at all" to "a lot." The

measure was developed by the SACDRC and the items were based on prior research concerning community protective factors (Forehand et al., 2000). This measure demonstrated acceptable internal consistency (α = .78).

Community risk. Primary caregivers reported on a 7-item measure how much statements described their neighborhood's presence of risk indicators (e.g., drugs being sold and used by some people in the neighborhood or there being gang fights in the neighborhood). Their responses were reported on a 4-point scale ranging from "not at all" to "a lot." The measure was developed by the SACDRC and the items were based on prior research regarding community risk factors (Forehand et al., 2000). This measure demonstrated excellent internal consistency (α = .90).

Behavioral Outcomes

Positive behavior. Teachers completed a measure based on The Social Competence Scale (Conduct Problems Prevention Research Group [CPPRG], 1999) and the Responsibility Scale (SACDRC, 2010). Teachers rated how frequently their student engaged in positive behaviors (e.g., returns borrowed belongings, works well in a group, plays by the rules) on a 4-point scale ranging from "never" to "almost always." The measure included 25 items (α = .97).

Problem behavior. Teachers completed a measure based on the Behavior Assessment System for Children (BASC) Aggression and Conduct Problems (Reynolds & Kamphaus, 1998) subscales as well as the Responsibility Scale (SACDRC, 2010). Teachers rated how frequently their student exhibited disruptive behavior problems (e.g., shows off, teases or hits others, talks back to teachers, cheats in school) on a 4-point scale ranging from "never" to "almost always." This measure included 23 items (α = .95).

Demographics

During each data collection, students reported whether they were a boy or girl on the student questionnaires, while primary caregivers reported their child's race/ethnicity (White; Black or African-American; Hispanic or Latino; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; Other). The race/ethnicity variable was recoded as a "White" and "Non-White" dichotomous variable due to concerns over potentially small cell sizes.

Data Analysis

We used Mplus version 5 (Muthén & Muthén, 2007) and conducted our analyses within a latent variable modeling framework. Latent variable modeling in Mplus is advantageous given its use of full information maximum likelihood estimation, which is an acceptable strategy for performing analyses when data are missing at random (Arbuckle, 1996; Little, 1995). This approach computes estimates using all available data for a given case (Muthén & Shedden, 1999; Schafer & Graham, 2002). Furthermore, prior to conducting our analyses, we examined the proportion of data present for the variables included in our models. We found that the covariance coverage of data in our analyses exceeded the 0.10 minimum that was necessary for models to converge (Muthén & Muthén, 2007).

Latent profile analyses were used to identify groups of children with similar profiles of social-emotional competence across each of the five data collection waves: fall grade 3, spring grade 3, fall grade 4, spring grade 4, and spring grade 5. LPA is a probabilistic, model-based, approach that categorizes individuals into distinct subgroups based on their pattern of scores on a set of measures (McCutcheon, 1987). Latent profiles

were thus identified based on the children's measures on the following five social-emotional competence indicators: altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. LPA models estimated posterior probabilities of profile membership, which were used to categorize children into their most likely social-emotional competence profile groups. Children's demographic characteristics and ecological predictors were included as covariates in the model. The ecological predictors included concurrent measures of the following home, parental, and community characteristics: socio-demographic risk, household chaos, poor parental monitoring/supervision, positive parenting, intergenerational closure, child-centered social control, community access to resources, and community risk. To ensure the identification of the global maximum likelihood, the analyses used 4,000 automated random starts in the optimization of the model.

Given the exploratory nature of latent profile analyses, we sequentially fit LPA models with two to five classes for each of the data collection waves. Due to the absence of a priori assumptions about the structure or distribution of classes, we relied on a set of fit indices, statistical tests, as well as substantive interpretation that was grounded in theory and empirical research to select the final model with the appropriate number of latent profiles (Nylund, Asparouhov, & Muthén, 2007). Aikaike information criterion (AIC), Bayesian information criterion (BIC), sample size adjusted Bayesian information criterion (ABIC), and entropy scores represented the subjective criteria in our model assessments. Models with the lowest AIC, BIC, and ABIC values were favored (Schwarz, 1978). As a measure of classification precision, we favored higher entropy scores. Lo-Mendell-Rubin (LMR; Lo, Mendell, & Rubin, 2001) and bootstrap likelihood ratio tests

(BLRT; McLachlan & Peel, 200) comprised the statistical tests in our analyses for comparing models. When making model comparisons, the distribution of two times the log-likelihood difference generally is chi-square distributed, but this is not applicable when utilizing latent class approaches. The LMR method, however, has the advantage of using the correct distribution of two times the log-likelihood difference in mixture analyses. Meanwhile, the BLRT approach generates data to obtain the bootstrap distribution of two times the log-likelihood difference. Both the LMR and BLRT approaches compare models with *k*-1 versus *k* classes. Significant results suggest rejecting the *k*-1 class model, thus favoring the model with *k* classes.

After determining the final LPA model, we added positive and problem behavior distal outcomes to our analyses to investigate the predictive validity of our social-emotional competence profiles. Specifically, we examined associations between children's social-emotional competence profiles with positive and problem behavior scores measured at the following data collection wave. The estimated positive and problem behavior distal outcome scores obtained in our models also adjusted for children's prior scores on these measures. For example, we explored associations between children's social-emotional competence at fall grade 3 with their involvement in positive and problem behaviors at spring grade 3, while adjusting for fall grade 3 behavior scores. We performed these analyses for children's social-emotional competence profiles from fall grade 3 to spring grade 4, which excludes spring grade 5 social-emotional competence profile associations because later behavioral measures were not available. We used equality of means tests to compare scores for the positive and problem behavior distal outcome measures across social-emotional competence profiles.

4.3 Results

Social-Emotional Competence Latent Profile Model Selection

Table 1 presents the indices for the selection of our latent profile model with one to five potential solutions. The three-class model was chosen as the best model for each wave. The AIC, BIC, and ABIC indices favored solutions with greater numbers of classes. However, prior simulation studies suggest that AIC favors models with greater numbers of classes as sample size increases (Nylund, Asparouhov, & Muthén, 2007). Meanwhile, the BIC does not perform well when class sizes are unequal and may overestimate the number of classes in a model (Nylund, Asparouhov, & Muthén, 2007). Entropy scores were highest for the three-class solutions across all data collection waves, which ranged from .940 for spring grade 5 to .971 for fall grade 3. Results from the LMR likelihood ratio tests and BLRTs supported three-class solutions for each data collection wave. For data collection waves beyond grade 3, however, the LMR likelihood ratio tests supported solutions with more than three classes. However, solutions with greater numbers of classes also may not be theoretically or empirically supported. Furthermore, the three-class solution yielded acceptable numbers of individuals for each profile, whereas the four-class solution yielded small class sizes for the social-emotional competence subgroups. Models with smaller class sizes may yield spurious findings or present convergence issues when testing hypothesized associations (Hipp & Bauer, 2006).

Social-Emotional Competence Profiles

Figure 1(a-e) illustrates the three social-emotional competence and behavior profiles that emerged in our analyses. These plots show the model estimated mean scores

for the social-emotional competence and behavior indicators used in the latent profile analyses for each of the five data collection waves. For fall grade 3 (Figure 1a), youth exhibiting the highest levels of empathy and lowest levels of normative beliefs about aggression as well as ADHD-related behavior comprised the largest group, which included 88.2% of the sample; we categorized this group of children as the "normative" class. In contrast, youth exhibiting the lowest levels of empathy, as well as the highest levels of self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior, comprised 1.8% of the sample and were the smallest group; we categorized this group of children as the "antisocial" class. An intermediate class of youth with lower levels of empathy relative to the normative class emerged. However, their empathy scores were not as low as the antisocial class. Furthermore, these youth exhibited elevated levels of normative beliefs about aggression and ADHD-related behavior, although their scores were comparatively lower than the antisocial class; thus, we categorized this group of children as the "maladaptive" class, which comprised 10.1% of the sample.

For each data wave, children with similar normative, maladaptive, and antisocial profiles of social-emotional competence and behavior emerged. The normative class always comprised the greatest proportion of children, followed by the maladaptive then antisocial classes. However, the actual prevalence of each latent profile group differed slightly across waves. Specifically, the prevalence of children in the normative class gradually decreased from 88.2% in fall grade 3 to 78.2% in spring grade 5. Meanwhile, the prevalence of children in the maladaptive class increased gradually from 10.1% in fall grade 3 to 18.3% in spring grade 5. The prevalence of children in the antisocial class also

increased, although the greatest change was from fall grade 3 (1.8%) to spring grade 3 (3.1%). Between spring grade 3 and spring grade 5, the prevalence of children in the antisocial class remained relatively stable, ranging from 2.7% in fall grade 4 to 3.4% in spring grade 5.

Comparison of Ecological Characteristics between Social-Emotional Competence Profiles

Table 2 presents the mean scores for the home, parental, and community ecological predictors for each of the latent profiles across data collection waves. Children in the normative class were most likely to be female (range = 54.0%-55.7%). Compared to the normative class, the maladaptive and antisocial classes comprised fewer females. The proportion of females in the maladaptive class was often greater than that of the antisocial class, although these differences were not significant. Between spring grade 3 and fall grade 4, the proportion of girls in the antisocial class increased from 22.4% to 27.8% and remained relatively stable. Meanwhile, children in the normative class were more likely to be White compared to those in the maladaptive and antisocial classes. Although the maladaptive class typically comprised more White children than the antisocial class, there generally were no significant differences between these groups. Across data collection waves, the proportion of White children in the antisocial class gradually decreased from 36.3% in fall grade 3 to 16.8% in spring grade 5.

Across data collection waves, children with maladaptive and antisocial profiles of social-emotional competence and behavior were more likely to reside in adverse home environments compared to those with normative profiles. Specifically, children in the maladaptive class resided in home environments with greater socio-demographic risk

compared to children in the normative class for all data collection waves except fall grade 3, when there were no significant differences. In fall grade 4, significant differences in socio-demographic risk emerged only when comparing children in the maladaptive class (M = 0.908) versus those in the normative class (M = 0.618). By spring grade 5, however, socio-demographic risk was greater among children in the maladaptive (M = 0.818) and antisocial (M = 1.035) classes compared to those in the normative class (M = 0.549). Thus, for most waves, socio-demographic risk was greater for children in the maladaptive class compared to those in the normative class. Comparing maladaptive and antisocial classes, however, there were no significant differences in socio-demographic risk. Meanwhile, there was no apparent trend for when significant differences in socio-demographic risk emerged between those in the antisocial versus normative class. Significant differences in parental characteristics were present only in spring grade 3, where poor monitoring/supervision was greatest for children in the antisocial class (M = 1.269) compared to the maladaptive (M = 1.161) and normative (M = 1.143) classes.

With regard to community characteristics, children with maladaptive and antisocial profiles generally resided in neighborhoods with greater levels of community risk compared to children with normative profiles. In spring grade 5, for example, community risk was greater among those in the maladaptive (M = 1.599) and antisocial (M = 1.804) classes compared to those in the normative class (M = 1.382). Compared to the normative class, community risk was consistently significantly greater among those in the maladaptive class. For all data collection waves except fall grade 3, community risk was greater among those in the antisocial class versus the normative class. Community risk was relatively higher among children with antisocial profiles versus those with

maladaptive profiles, although these differences often were not significant. For some data collection waves, intergenerational closure and child-centered social control were lower among children in the maladaptive and antisocial classes compared to children in the normative class. In spring grade 5, for instance, intergenerational closure was significantly lower for the antisocial class (M = 2.868) compared to both the maladaptive (M = 3.122) and normative classes (M = 3.247). Community access to resources differed between classes only in spring grade 3, which was lowest for the antisocial class (M = 2.385) compared to the maladaptive (M = 2.750) and normative (M = 2.766) classes.

Ecological Predictors of Social-Emotional Competence Profiles

Multinominal associations between the ecological predictors and social-emotional competence profiles using the normative and maladaptive classes as the references are shown in Tables 3 and 4, respectively. Individual characteristics such as gender and race, however, most consistently predicted latent class membership for our three social-emotional competence profiles. For all data collection waves, the odds of being in the maladaptive versus normative class were lower among girls compared to boys. In spring grade 5, for instance, girls had a significantly decreased odds of being in the maladaptive versus normative class compared to boys (OR = 0.49; $p < .001$). Moreover, the odds of being in the antisocial class versus normative class were especially lower among girls compared to boys. Specifically, the odds of being in the antisocial versus normative class were 0.25 times that of boys compared to girls ($p < .001$). Race/ethnicity differences in social-emotional competence profile only emerged after grade 4, such that White children compared to Non-White children were significantly less likely to be in the maladaptive class, or antisocial class, versus the normative class after

adjusting for other ecological characteristics and covariates. In spring grade 5, for instance, White children versus Non-White children had 0.58 times the odds of being in the maladaptive versus normative class ($p < .01$). Meanwhile, their odds of being in the antisocial versus normative class were 0.25 times that of Non-White children ($p < .05$).

Although some ecological factors significantly predicted social-emotional competence profiles across late childhood, there was no apparent trend for these associations. Parental and community characteristics predicted children's social-emotional competence profiles in spring grade 3, which was the only data collection wave in which ecological predictors influenced the likelihood that children would be in the antisocial versus maladaptive class. Specifically, poor parental monitoring/supervision increased the likelihood that children would be in the antisocial versus normative class (OR = 3.62; $p < .05$) as well as the likelihood that children would be in the antisocial versus maladaptive class (OR = 3.59; $p < .05$). In contrast, community access to resources decreased the likelihood that children would be in the antisocial class versus normative class (OR = 0.60; $p < .01$), in addition to the likelihood that children would be in the antisocial versus maladaptive class (OR = 0.62; $p < .05$). Home and community characteristics also influenced latent class membership in fall grade 4, when both socio-demographic risk (OR = 1.35, $p < .05$) and community risk (OR = 1.41; $p < .05$) increased the odds that children would be in the maladaptive versus normative classes.

Behavioral Outcomes of Social-Emotional Competence Profiles

Table 5 presents comparisons of mean scores for positive and problem behaviors between the social-emotional competence profiles. In general, children in the antisocial

class exhibited the lowest levels of positive behaviors in subsequent data collection waves while those in the maladaptive class showed the second lowest. For example, positive behaviors in spring grade 5 were significantly lower for children in the maladaptive (M = 2.91) and antisocial (M = 2.75) classes in spring grade 4 compared to those in the normative class (M = 3.23). Differences were particularly pronounced in spring grade 4. Specifically, positive behavior in spring grade 4 was significantly lower for children in the antisocial class (M = 2.67) compared to children in both the normative (M = 3.15) and maladaptive (M = 2.91) classes in fall grade 4. In contrast to positive behaviors, problem behaviors were greatest among children in the antisocial class followed by those in the maladaptive class. For instance, problem behaviors in spring grade 3 were significantly greater for children in the antisocial (M = 1.71) and maladaptive (M = 1.58) classes in fall grade 3 compared to those in the normative class (M = 1.38).

4.4 Discussion

The current study aimed to assess the heterogeneity of social-emotional competence over five time points among children who were followed from third to fifth grade. The findings advance the extant literature by using latent profile analysis (LPA) to classify children based on their profiles of social-emotional competence from middle to late childhood, a transitional period for which developmental research is sparse. Guided by the ecological model (Bronfenbrenner & Morris, 1998), we also determined the influence of concurrent home, parental, and community characteristics on children's social-emotional competence profiles. In addition, we examined whether social-emotional profiles predicted later behavioral outcomes. Consistent with our first

hypothesis, subtypes of children with different profiles of social-emotional competence emerged between grades 3 and 5. In line with our second hypothesis, ecological predictors were associated with children's social-emotional competence profiles, particularly home and community characteristics. Lastly, social-emotional competence profiles predicted children's later involvement in positive and problematic behaviors, which supports our third hypothesis.

Profiles of Social-Emotional Competence

Consistent with our first hypothesis, we identified groups of children with distinct profiles of social-emotional competence, as measured by their altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior. Based on these indicators, we categorized children into three social-emotional competence subtypes: "normative," "maladaptive," or "antisocial." Normative children scored highest on empathy and lowest on normative beliefs about aggression and ADHD-related behavior. Maladaptive youth scored comparatively lower on empathy and higher on normative beliefs about aggression and ADHD-related behavior. Antisocial youth, however, scored lowest on empathy and highest on normative beliefs about aggression and ADHD-related behavior, while generally scoring higher on self-efficacy for peer interaction as well. Across data collection waves, we identified these same social-emotional competence profiles, which illustrates the developmental consistency of these profile structures. The findings suggest that considering the heterogeneity of children's social-emotional competence will be crucial in designing effective prevention programs. Namely, multi-tiered intervention approaches used in

programs such as Academic and Behavioral Competencies (ABC; Pelham et al., 2005) may improve middle and late childhood social and emotional outcomes.

Across data collection waves, the prevalence of youth with antisocial profiles was comparable to lifetime prevalence estimates of antisocial personality disorder among adults (Compton et al., 2005). Meanwhile, the proportion of children with maladaptive profiles is consistent with prior studies estimating the prevalence of behavioral disorders among youth (Merikangas et al., 2010). Although similar profiles of social-emotional competence emerged across waves with consistent relative sizes (e.g., the normative class remained the largest group while the antisocial class was the smallest), there were some noteworthy changes in their prevalence. Specifically, the prevalence of children with normative profiles decreased from 88.2% in fall grade 3 to 78.2% in spring grade 5. In contrast, the prevalence of children in the antisocial class increased from 1.8% to 3.1% in grade 3, while those in the maladaptive class increased from 12.5% in spring grade 4 to 18.3% in spring grade 5. The growing proportion of maladaptive and antisocial youth across the transition from middle to late childhood reflects findings from earlier research, which has shown that children are more likely to express approval of aggression or report involvement in disruptive behavior towards the end of primary school (Glew et al., 2005; Huesmann & Guerra, 1997). This highlights the importance of prevention efforts that bolster youth social-emotional competence during this developmental period, as these outcomes may still be malleable.

The social-emotional competence profile of children in the antisocial class is particularly noteworthy in this study. As previously mentioned, antisocial children typically endorsed higher levels of self-efficacy for peer interaction and normative beliefs

about aggression simultaneously. While researchers generally agree that narcissism may be linked to aggressive behavior, empirical studies concerning the relationship between high or low self-esteem and aggression have yielded mixed findings (Baumeister, Sharp, & Boden, 1996; Bushman et al., 2009; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Research has suggested, however, that these discrepant findings may be due to the variability of study samples used to generalize results or the multidimensional nature of self-esteem (Ostrowsky, 2010). Our study sheds light on this debate by showing that third and fourth grade children with antisocial competence profiles highly approved of using aggression in social interactions while highly appraising their ability to navigate social situations (e.g., asking peers to be a partner on a trip or to play a game they liked). By fifth grade, however, children's appraisals of self-efficacy in these situations were relatively comparable across the three profiles identified in our analyses. Meanwhile, it appeared that empathy remained an important indicator for distinguishing between social-emotional competence subtypes. Our findings suggest that developmental stage, self-esteem domain, and other social-emotional competency characteristics (e.g., empathy) should be considered in future assessments regarding the association between self-esteem and aggression.

Ecological Predictors of Social-Emotional Competence Profile

In support of our second hypothesis, concurrent home, parental, and community characteristics were significant predictors of children's social-emotional competence profiles. These findings are consistent with prior research on competence and resilience (Masten & Coatsworth, 1998; Masten & Obradović, 2006), which have characterized competence as one's adaptability to their environment in consideration of their society,

culture, and time. For example, socio-demographic risk increased children's likelihood of being in the maladaptive versus normative class. Furthermore, community risk increased children's likelihood of being in the maladaptive and antisocial classes. In line with ecological (Bronfenbrenner & Morris, 1998) and developmental perspectives (Gutman, Sameroff, & Cole, 2003), the influence of these home and community predictors varied by data collection wave and were significant in grades 3 and 4. Interestingly, changes in developmental tasks typically occur during this period for children, who are expected to draw upon previously acquired social and cognitive skills to gain new knowledge and advance their critical thinking abilities (Altermatt & Pomerantz, 2003; Bub, 2009). Thus, as changes in developmental tasks are taking place during this period, our findings suggest that home and community interventions may be implemented to improve children's social-emotional outcomes.

Although we found that several ecological predictors distinguished between children in the normative class from those in the maladaptive and antisocial classes, fewer characteristics distinguished between those in the maladaptive and antisocial classes. Namely, poor monitoring and supervision increased children's likelihood of being in the antisocial versus maladaptive and normative classes, which has been widely shown in prior empirical studies (Kerr & Stattin, 2000; Stattin & Kerr, 2000). These results continue to highlight the importance of fostering open and communicative relationships between parents and children, particularly between middle and late childhood. In addition, community access to resources decreased children's risk for being in the antisocial class, which is consistent with prior research showing that access to neighborhood resources, such as health or community centers, may improve children's

social-emotional development (Loeb et al., 2007). These findings also illustrate the promotive influence of access to resources by highlighting its salience for children as they developed across middle and late childhood.

Behavioral Outcomes of Social-Emotional Competence Profiles

As expected, children's social-emotional competence profiles predicted later positive and problem behaviors. Studies have widely shown that children's social-emotional competence is predictive of later behavioral outcomes (Frey, Nolen, Van Schoiack Edstrom & Hirschstein, 2005; Webster-Stratton & Reid, 2003; Webster-Stratton, Reid, & Stoolmiller, 2008). However, these studies were based primarily on variable-centered approaches rather than person-centered approaches. We found that children with maladaptive and antisocial profiles typically engaged in significantly greater levels of problem behaviors and lower levels of positive behaviors compared to those with normative profiles. These findings provide evidence of the predictive validity of the social-emotional competence profiles that we obtained in our study. Among fourth graders, differences in behavioral outcomes were significant across all social-emotional competence profiles. For example, children identified as having antisocial profiles in the fall exhibited the lowest levels of positive behavior in the spring compared to those with normative or maladaptive profiles. With the exception of fourth grade, behavioral outcomes did not differ significantly between children with antisocial and maladaptive social-emotional competence profiles. Our study demonstrates the importance of behavioral interventions for children with either antisocial or maladaptive social-emotional competence profiles, particularly in fourth grade. One promising program for these individuals may be Positive Behavioral Interventions and Supports (PBIS), which

reduces children's disruptive behaviors using multi-tiered prevention approaches (Bradshaw, 2013; Bradshaw et al., 2012). For instance, students with substantial social-emotional competence deficits (e.g., maladaptive or antisocial children) may benefit from intensive interventions that include functional assessments or individualized behavior support plans that come as part of PBIS (Reinke, Splett, Robeson, & Offutt, 2008). Another potential program may be Positive Action (PA), which addresses children's behavioral outcomes through bolstering their social-emotional competence (Flay & Allred, 2003). Efforts to tailor programs for children with more unfavorable social-emotional competence profiles may be an essential strategy for improving their later behavioral outcomes.

Limitations

This study has several limitations worth noting. One limitation is that we focused on children between grades 3 and 5. Although few studies have focused on middle and late childhood, the generalizability of our findings may be limited to those during this developmental period. Future research should consider whether similar social-emotional competence patterns emerge among youth during early childhood or adolescence; they may also examine later outcomes associated with the social-emotional competence profiles that we observed. Another limitation may be that our measures of social-emotional competence did not include all relevant indicators. We note, however, that the indicators for this study may represent measures of skills that have been described as crucial for children's social-emotional learning (Zins, Bloodworth, Weissberg, & Wahlberg, 2007). Moreover, the entropy scores obtained in our study indicated excellent classification quality, suggesting that the indicators used in our analyses allowed us to

categorize children with substantial accuracy (Celeux & Soromenho, 1996). Nevertheless, future studies may explore whether additional indicators would be useful for identifying children's social-emotional competence profiles. Finally, we acknowledge the exploratory nature of LPA as another potential limitation, as there is no definitive test for the "true" number of latent classes (Nylund, Asparouhov, & Muthén, 2007). In the absence of a priori cut-points for our social-emotional competence indicators, the meanings of the latent profiles that emerged in our analyses were subjective and should be interpreted with caution. Despite this limitation, it is also important to note that this approach allowed us to identify the heterogeneity of children's social-emotional competence that might not have been uncovered previously.

4.5 Conclusion

Whereas most research has focused on early childhood or adolescence, this study enhances our knowledge of children's social-emotional development between middle and late childhood. We determined that children may be distinguished based on three profiles of social-emotional competence: normative, maladaptive, and antisocial. In line with our conceptual understanding of "competence," ecological characteristics were linked with children's social-emotional competence profile. Moreover, assessing associations between the social-emotional competence profiles of children and their subsequent engagement in positive and problematic behaviors provided further evidence of the validity of the latent profile classes that emerged in our analyses. An important next step will be to investigate the stability of children's class membership over time. Considering the growing proportion of youth exhibiting maladaptive or antisocial profiles of

competence across middle and late childhood, it will be necessary to explore the significance of these transitions and their ecological predictors.

Overall, this study provides substantial contributions to our understanding of children's social-emotional development. Our findings suggest that indicated intervention efforts may be necessary for improving outcomes for youth with maladaptive or antisocial profiles of social-emotional competence. To that end, screening for these at-risk individuals might be a necessary strategy for prevention (Lochman & Conduct Problems Prevention Research Group, 1995). Furthermore, tailoring programs to children's specific needs will be crucial to ensuring the effectiveness of these endeavors. This might include addressing any social, emotional, and behavioral concerns (e.g., empathy or beliefs about aggression) specific to groups of children based on their competence profiles, as well as targeting risk and promotive factors found across ecological contexts (e.g., home and community environments). Indeed, enhancing social-emotional competence represents an important step towards cultivating the resiliency that children may need to adapt to the developmental challenges they must overcome later in life. Thus, targeted prevention approaches and tailoring intervention strategies will be crucial to achieve this goal.

4.6 References

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Table 1

Latent Profile Analysis Model Selection

	Log likelihood	No. of free parameters	AIC	BIC	ABIC	Entropy	LMR
Fall Grade 3							
(N = 1830)							
1	-31964.349	30	63988.698	64170.056	64074.734	1.000	n/a
2	-6592.993	26	13237.985	13381.242	13298.641	0.971	.0027
3[a]	**-6290.074**	**42**	**12664.148**	**12895.563**	**12762.130**	**0.971**	**.0079**
4	-6096.801	58	12309.603	12629.176	12444.912	0.948	.2164
5	-5906.848	74	11961.696	12369.427	12134.332	0.955	.0637
Spring Grade 3							
(N = 1570)							
1	-26342.551	30	52745.103	52926.461	52831.138	1.000	n/a
2	-5898.800	26	11849.600	11988.880	11906.284	0.939	.0537
3[a]	**-5564.304**	**42**	**11212.608**	**11437.599**	**11304.174**	**0.947**	**<.0001**
4	-5397.233	58	10910.466	11221.168	11036.915	0.932	.3089
5	-5261.216	74	10670.432	11066.844	10831.763	0.878	.3423

(continued)

(continued)

	Log likelihood	No. of free parameters	AIC	BIC	ABIC	Entropy	LMR
Fall Grade 4							
(N = 1420)							
1	-24399.503	30	48859.007	49040.365	48945.042	1.000	n/a
2	-5610.888	26	11273.776	11410.550	11327.957	0.953	<.0001
3[a]	**-5295.827**	**42**	**10675.654**	**10896.596**	**10763.176**	**0.959**	**<.0001**
4	-5082.854	58	10281.707	10586.818	10402.572	0.958	.0010
5	-4921.772	74	9991.545	10380.823	10145.751	0.950	.0050
Spring Grade 4							
(N = 1490)							
1	-25721.925	30	51503.850	51685.208	51589.885	1.000	n/a
2	-5826.712	26	11705.424	11843.446	11760.851	0.940	<.0001
3[a]	**-5503.046**	**42**	**11090.091**	**11313.050**	**11179.628**	**0.942**	**<.0001**
4	-5293.210	58	10702.419	11010.315	10826.065	0.931	.0133
5	-5141.536	74	10431.071	10431.071	10588.827	0.887	<.0001

(continued)

(continued)

	Log likelihood	No. of free parameters	AIC	BIC	ABIC	Entropy	LMR
Spring Grade 5 (N = 1200)							
1	-22477.876	30	45015.752	45197.110	45101.788	1.000	n/a
2	-4891.019	26	9834.037	9966.271	9883.685	0.893	.0117
3[a]	**-4594.682**	**42**	**9273.363**	**9486.971**	**9353.563**	**0.940**	**<.0001**
4	-4477.829	58	9071.658	9366.640	9182.410	0.896	.0001
5	-4363.560	74	8875.120	9251.477	9016.425	0.916	.0328

Note. Bold indicates the selected solution. AIC = Akaike information criterion; BIC = Bayesian information criterion; ABIC = Sample-size adjusted Bayesian information criterion; LMR = Lo-Mendel-Rubin adjusted likelihood ratio test. Unweighted Ns have been rounded to nearest 10 to comply with IES restricted-use data reporting requirements.

[a]$p < .001$ for Bootstrapped Likelihood Ratio Test; test favors 3 class solution over a 2 class solution.

Table 2

Comparison of Ecological Predictors between Social Emotional Competence and Behavior Profiles

	Normative Class		Maladaptive Class		Antisocial Class	
Predictor	% or *M*	*SD*	% or *M*	*SD*	% or *M*	*SD*
Fall Grade 3						
Female	54.2%		39.9%[a]		21.5%[a,b]	
White	48.5%		41.5%		36.3%	
Socio-demographic Risk	0.708	0.800	0.807	0.804	0.792	0.839
Household Chaos	2.181	0.510	2.236	0.534	2.151	0.493
Poor Monitoring/Supervision	1.148	0.207	1.159	0.247	1.190	0.200
Positive Parenting	3.535	0.447	3.503	0.477	3.490	0.445
Intergenerational Closure	3.146	0.766	2.987[a]	0.789	3.180	0.600
Child-centered Social Control	4.137	0.849	3.920[a]	0.913	4.103	0.924
Community Access to Resources	2.719	0.820	2.601	0.778	2.683	0.873
Community Risk	1.477	0.683	1.618[a]	0.762	1.585	0.787

(continued)

(continued)

Predictor	Normative Class		Maladaptive Class		Antisocial Class	
	% or *M*	*SD*	% or *M*	*SD*	% or *M*	*SD*
Spring Grade 3						
Female	54.0%		37.1%[a]		22.4%[a]	
White	51.3%		34.6%[a]		25.7%[a]	
Socio-demographic Risk	0.646	0.789	0.818[a]	0.769	0.921[a]	0.795
Household Chaos	2.179	0.530	2.161	0.489	2.247	0.579
Poor Monitoring/Supervision	1.143	0.210	1.161	0.230	1.269[a,b]	0.329
Positive Parenting	3.515	0.465	3.549	0.460	3.481	0.539
Intergenerational Closure	3.176	0.771	3.175	0.743	2.859[a,b]	0.868
Child-centered Social Control	4.156	0.828	4.070	0.817	3.855[a]	0.945
Community Access to Resources	2.766	0.825	2.750	0.823	2.385[a,b]	0.707
Community Risk	1.432	0.657	1.574[a]	0.747	1.883[a,b]	0.778

(continued)

(continued)

Predictor	Normative Class		Maladaptive Class		Antisocial Class	
	% or *M*	*SD*	% or *M*	*SD*	% or *M*	*SD*
Fall Grade 4						
Female	54.1%		36.3%[a]		27.8%[a]	
White	51.9%		35.2%[a]		23.5%[a]	
Socio-demographic Risk	0.618	0.775	0.908[a]	0.811	0.803	0.885
Household Chaos	2.149	0.523	2.128	0.518	2.188	0.518
Poor Monitoring/Supervision	1.149	0.237	1.185	0.247	1.159	0.230
Positive Parenting	3.490	0.481	3.481	0.469	3.609	0.416
Intergenerational Closure	3.222	0.764	3.231	0.713	2.989	0.926
Child-centered Social Control	4.186	0.843	4.087	0.837	3.874	0.964
Community Access to Resources	2.819	0.840	2.809	0.835	2.592	0.776
Community Risk	1.392	0.619	1.613[a]	0.766	1.762[a]	0.840

(continued)

(continued)

Predictor	Normative Class		Maladaptive Class		Antisocial Class	
	% or *M*	*SD*	% or *M*	*SD*	% or *M*	*SD*
Spring Grade 4						
Female	55.2%		41.5%[a]		26.5%[a]	
White	53.1%		29.2%[a]		16.3%[a]	
Socio-demographic Risk	0.640	0.790	0.901[a]	0.799	1.038[a]	0.825
Household Chaos	2.172	0.539	2.169	0.566	2.122	0.476
Poor Monitoring/Supervision	1.163	0.232	1.175	0.214	1.209	0.237
Positive Parenting	3.479	0.482	3.412	0.542	3.485	0.467
Intergenerational Closure	4.192	0.815	4.056[a]	0.819	3.894[a]	0.881
Child-centered Social Control	3.229	0.756	3.103[a]	0.730	3.054	0.751
Community Access to Resources	2.768	0.840	2.810	0.839	2.707	0.807
Community Risk	1.403	0.623	1.572[a]	0.709	1.788[a]	0.858

(continued)

(continued)

Predictor	Normative Class		Maladaptive Class		Antisocial Class	
	% or *M*	*SD*	% or *M*	*SD*	% or *M*	*SD*
Spring Grade 5						
Female	55.7%		39.9%[a]		26.4%[a]	
White	55.0%		35.6%[a]		16.8%[a,b]	
Socio-demographic Risk	0.549	0.729	0.818[a]	0.810	1.035[a]	0.828
Household Chaos	2.174	0.534	2.064[a]	0.454	2.216	0.495
Poor Monitoring/Supervision	1.171	0.228	1.200	0.276	1.261	0.322
Positive Parenting	3.448	0.500	3.419	0.531	3.454	0.567
Intergenerational Closure	3.247	0.748	3.122[a]	0.778	2.868[a,b]	0.699
Child-centered Social Control	4.227	0.816	3.997[a]	0.912	3.906[a]	0.704
Community Access to Resources	2.800	0.845	2.735	0.848	2.724	0.832
Community Risk	1.382	0.606	1.599[a]	0.763	1.804[a]	0.795

Note. % = Percentage.

[a] $p < .05$ significant difference compared to Normative Class

[b] $p < .05$ significant difference compared to Maladaptive Class

Table 3

Multinomial Associations between Ecological Predictors and Social Emotional Competence and Behavior Profiles using Normative Class as Reference

Reference: Normative Class	Maladaptive Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Fall Grade 3						
Female	-0.63	0.18	0.53***	-1.48	0.45	0.23**
White	-0.10	0.21	0.90	-0.51	0.56	0.60
Socio-demographic Risk	0.04	0.12	1.04	0.01	0.28	1.01
Household Chaos	0.11	0.18	1.11	-0.19	0.41	0.82
Poor Monitoring/Supervision	-0.09	0.49	0.91	0.51	0.72	1.66
Positive Parenting	-0.06	0.19	0.94	-0.26	0.41	0.77
Intergenerational Closure	-0.08	0.15	0.92	0.23	0.29	1.25
Child-centered Social Control	-0.15	0.12	0.86	-0.01	0.34	0.99
Community Access to Resources	-0.08	0.11	0.92	-0.06	0.27	0.94
Community Risk	0.09	0.14	1.10	0.16	0.34	1.18

(continued)

(continued)

Reference: Normative Class	Maladaptive Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 3						
Female	-0.73	0.17	0.48***	-1.47	0.38	0.23***
White	-0.64	0.21	0.53**	-0.70	0.38	0.49
Socio-demographic Risk	0.10	0.12	1.10	-0.03	0.21	0.97
Household Chaos	-0.06	0.16	0.94	-0.06	0.31	0.94
Poor Monitoring/Supervision	0.01	0.42	1.01	1.29	0.52	3.62*
Positive Parenting	0.09	0.20	1.10	-0.04	0.32	0.97
Intergenerational Closure	0.25	0.14	1.28	-0.14	0.29	0.87
Child-centered Social Control	-0.06	0.13	0.94	0.23	0.28	1.26
Community Access to Resources	-0.03	0.11	0.97	-0.51	0.19	0.60**
Community Risk	0.16	0.14	1.17	0.56	0.21	1.75**

(continued)

(continued)

Reference: Normative Class	Maladaptive Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Fall Grade 4						
Female	-0.77	0.19	0.46***	-1.15	0.36	0.32**
White	-0.44	0.23	0.65	-1.17	0.49	0.31*
Socio-demographic Risk	0.30	0.13	1.35*	-0.11	0.29	0.89
Household Chaos	-0.10	0.18	0.90	0.23	0.38	1.26
Poor Monitoring/Supervision	0.08	0.31	1.08	-0.37	0.77	0.69
Positive Parenting	-0.14	0.18	0.87	0.56	0.41	1.75
Intergenerational Closure	0.32	0.16	1.37	0.08	0.33	1.09
Child-centered Social Control	-0.02	0.13	0.98	-0.06	0.24	0.95
Community Access to Resources	0.02	0.12	1.02	-0.21	0.20	0.81
Community Risk	0.35	0.16	1.41*	0.36	0.24	1.43

(continued)

(continued)

Reference: Normative Class	Maladaptive Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 4						
Female	-0.63	0.17	0.53***	-1.35	0.35	0.26***
White	-0.94	0.22	0.39***	-1.56	0.49	0.21**
Socio-demographic Risk	0.16	0.12	1.18	0.16	0.22	1.18
Household Chaos	0.00	0.18	1.00	-0.16	0.27	0.85
Poor Monitoring/Supervision	-0.43	0.35	0.65	-0.11	0.54	0.89
Positive Parenting	-0.28	0.18	0.75	-0.03	0.29	0.97
Intergenerational Closure	0.02	0.13	1.02	-0.11	0.23	0.90
Child-centered Social Control	-0.02	0.15	0.98	0.19	0.25	1.20
Community Access to Resources	0.17	0.12	1.18	0.00	0.21	1.00
Community Risk	0.12	0.14	1.13	0.36	0.25	1.43

(continued)

(continued)

Reference: Normative Class	Maladaptive Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 5						
Female	-0.71	0.17	0.49***	-1.39	0.38	0.25***
White	-0.55	0.20	0.58**	-1.40	0.56	0.25*
Socio-demographic Risk	0.23	0.13	1.25	0.33	0.27	1.39
Household Chaos	-0.57	0.16	0.56***	0.03	0.34	1.03
Poor Monitoring/Supervision	0.15	0.35	1.17	0.34	0.50	1.40
Positive Parenting	-0.27	0.17	0.76	-0.10	0.36	0.91
Intergenerational Closure	0.15	0.15	1.16	-0.24	0.28	0.79
Child-centered Social Control	-0.18	0.14	0.84	0.17	0.22	1.18
Community Access to Resources	-0.04	0.11	0.96	0.10	0.28	1.10
Community Risk	0.21	0.15	1.23	0.35	0.26	1.42

Note. OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 4

Multinomial Associations between Ecological Predictors and Social Emotional Competence and Behavior Profiles using Maladaptive Class as Reference

Reference: Maladaptive Class	Normative Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Fall Grade 3						
Female	0.626	0.178	1.87***	-0.849	0.491	0.43
White	0.103	0.210	1.11	-0.406	0.605	0.67
Socio-demographic Risk	-0.038	0.122	0.96	-0.024	0.304	0.98
Household Chaos	-0.105	0.178	0.90	-0.297	0.440	0.74
Poor Monitoring/Supervision	0.092	0.488	1.10	0.598	0.889	1.82
Positive Parenting	0.063	0.190	1.07	-0.194	0.442	0.82
Intergenerational Closure	0.080	0.145	1.08	0.305	0.319	1.36
Child-centered Social Control	0.150	0.123	1.16	0.139	0.356	1.15
Community Access to Resources	0.078	0.111	1.08	0.017	0.288	1.02
Community Risk	-0.093	0.143	0.91	0.070	0.368	1.07

(continued)

(continued)

Reference: Maladaptive Class	Normative Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 3						
Female	0.734	0.174	2.08***	-0.738	0.413	0.48
White	0.638	0.211	1.89**	-0.066	0.420	0.94
Socio-demographic Risk	-0.095	0.124	0.91	-0.121	0.235	0.89
Household Chaos	0.062	0.163	1.06	0.002	0.338	1.00
Poor Monitoring/Supervision	-0.008	0.418	0.99	1.279	0.632	3.59*
Positive Parenting	-0.093	0.196	0.91	-0.128	0.358	0.88
Intergenerational Closure	-0.245	0.140	0.78	-0.380	0.317	0.68
Child-centered Social Control	0.064	0.128	1.07	0.293	0.300	1.34
Community Access to Resources	0.030	0.105	1.03	-0.480	0.210	0.62*
Community Risk	-0.155	0.143	0.86	0.404	0.234	1.50

(continued)

(continued)

Reference: Maladaptive Class	Normative Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Fall Grade 4						
Female	0.767	0.192	2.15***	-0.387	0.400	0.68
White	0.437	0.229	1.55	-0.731	0.536	0.48
Socio-demographic Risk	-0.303	0.130	0.74*	-0.414	0.305	0.66
Household Chaos	0.104	0.176	1.11	0.335	0.404	1.40
Poor Monitoring/Supervision	-0.081	0.307	0.92	-0.454	0.800	0.64
Positive Parenting	0.142	0.175	1.15	0.702	0.427	2.02
Intergenerational Closure	-0.317	0.163	0.73	-0.234	0.355	0.79
Child-centered Social Control	0.016	0.134	1.02	-0.038	0.262	0.96
Community Access to Resources	-0.023	0.120	0.98	-0.230	0.219	0.79
Community Risk	-0.347	0.158	0.71*	0.014	0.277	1.01

(continued)

(continued)

Reference: Maladaptive Class	Normative Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 4						
Female	0.627	0.174	1.87***	-0.725	0.383	0.48
White	0.940	0.221	2.56***	-0.623	0.523	0.54
Socio-demographic Risk	-0.163	0.118	0.85	0.000	0.239	1.00
Household Chaos	0.002	0.179	1.00	-0.158	0.305	0.85
Poor Monitoring/Supervision	0.430	0.353	1.54	0.318	0.598	1.37
Positive Parenting	0.284	0.176	1.33	0.254	0.324	1.29
Intergenerational Closure	-0.015	0.131	0.99	-0.125	0.253	0.88
Child-centered Social Control	0.017	0.147	1.02	0.202	0.276	1.22
Community Access to Resources	-0.167	0.122	0.85	-0.165	0.234	0.85
Community Risk	-0.119	0.139	0.89	0.240	0.269	1.27

(continued)

(continued)

Reference: Maladaptive Class	Normative Class			Antisocial Class		
Predictor	*B*	*SE*	OR	*B*	*SE*	OR
Spring Grade 5						
Female	0.714	0.168	2.04***	-0.674	0.399	0.51
White	0.553	0.203	1.74**	-0.847	0.582	0.43
Socio-demographic Risk	-0.225	0.126	0.80	0.105	0.282	1.11
Household Chaos	0.571	0.162	1.77***	0.602	0.363	1.83
Poor Monitoring/Supervision	-0.153	0.345	0.86	0.187	0.565	1.21
Positive Parenting	0.273	0.168	1.31	0.176	0.379	1.19
Intergenerational Closure	-0.145	0.153	0.87	-0.380	0.305	0.68
Child-centered Social Control	0.177	0.139	1.19	0.345	0.238	1.41
Community Access to Resources	0.042	0.111	1.04	0.137	0.296	1.15
Community Risk	-0.207	0.145	0.81	0.146	0.277	1.16

Note. OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 5

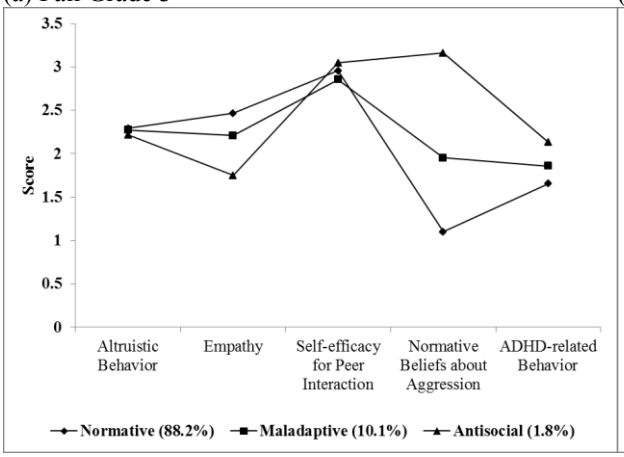
Comparison of Positive and Problem Behaviors between Social Emotional Competence and Behavior Profile

		Positive Behavior			Problem Behavior	
Profile		*M*	*SD*		*M*	*SD*
				Spring Grade 3		
Fall Grade 3						
	Normative	3.11	0.67		1.38	0.41
	Maladaptive	2.84_{a}	0.70		1.58_{a}	0.49
	Antisocial	2.68_{a}	0.68		1.71_{a}	0.57
				Fall Grade 4		
Spring Grade 3						
	Normative	3.14	0.67		1.32	0.42
	Maladaptive	2.85_{a}	0.69		1.49_{a}	0.44
	Antisocial	2.72_{a}	0.67		1.63_{a}	0.46
				Spring Grade 4		
Fall Grade 4						
	Normative	3.15	0.67		1.37	0.43
	Maladaptive	2.91_{a}	0.66		1.52_{a}	0.51
	Antisocial	$2.67_{a,b}$	0.65		1.63_{a}	0.58
				Spring Grade 5		
Spring Grade 4						
	Normative	3.23	0.66		1.37	0.46
	Maladaptive	2.91_{a}	0.66		1.58_{a}	0.48
	Antisocial	2.75_{a}	0.65		1.67_{a}	0.52

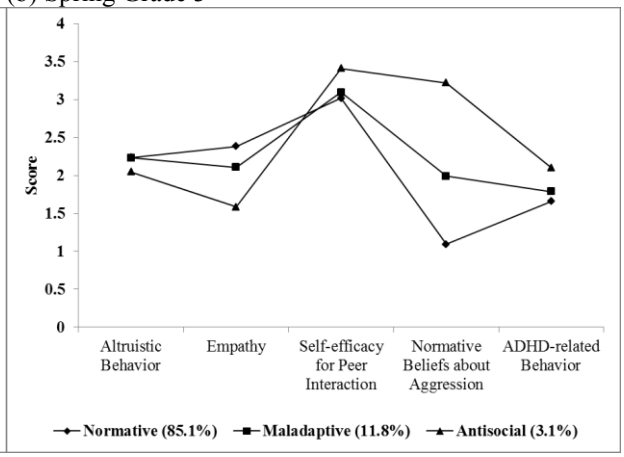
[a] $p < .05$ significant difference compared to Normative Class

[b] $p < .05$ significant difference compared to Maladaptive Class

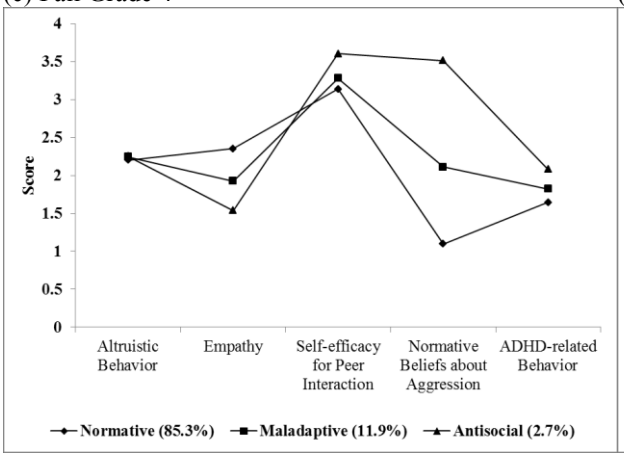
(a) Fall Grade 3



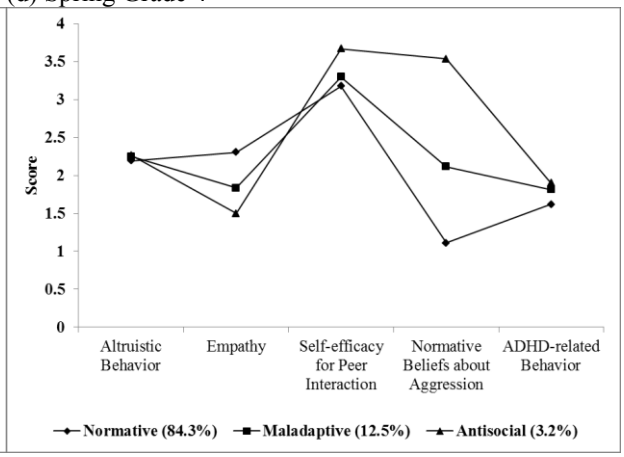
(b) Spring Grade 3



(c) Fall Grade 4



(d) Spring Grade 4



(e) Spring Grade 5

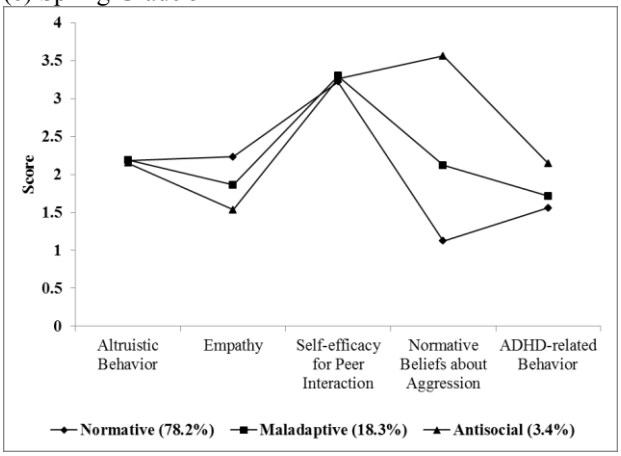


Figure 1. Social-emotional competence profiles by data collection wave

CHAPTER 5.

DISCUSSION AND CONCLUSIONS

5.1 Study Overviews and Key Findings

The purpose of this thesis was to examine the extent to which ecological predictors influenced children's social, emotional, and behavioral outcomes between middle and late childhood. Our conceptual model, guided by ecological, transactional, developmental, and social-emotional learning perspectives, informed the aims and hypotheses of our studies. The ecological predictors of this research focused on home, parental, and community characteristics, which have been understudied in the empirical literature. Specifically, the predictors included the following: socio-demographic risk, household chaos, poor parental monitoring/supervision, positive parenting, intergenerational closure, child-centered social control, community access to resources, and community risk. The social, emotional, and behavioral outcomes included altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior.

The research used data from the Institute of Education Sciences' Social and Character Development (SACD) Research Program, which was a multisite evaluation of seven school-based programs. We conducted our studies using a sample of children who served as controls in the SACD Program and were followed between grades 3 and 5, which coincide with the transition between middle and late childhood. Our analyses used reports from all five data collection waves: fall grade 3, spring grade 3, fall grade 4, spring grade 4, and spring grade 5. In the following sections, we present overviews of the studies and key findings for the current thesis research.

Chapter 2. Ecological Predictors of Children's Social-Emotional Learning: Gender and Race as Moderators

In this study, we examined the influence of multiple home, parental, and community characteristics at grade 3 on social-emotional learning outcomes among children in grade 5 using structural equation modeling (Bollen, 1989). We found that home, parental, and community characteristics at grade 3 generally predicted children's social-emotional learning outcomes at grade 5. Consistent with prior research, socio-demographic, poor parental monitoring and supervision, and community risk adversely affected many social-emotional learning outcomes (Bradley & Corwyn, 2002; Sampson, Raudenbush, & Earls, 1997). Unexpectedly, however, socio-demographic and community risk also predicted greater levels of altruistic behavior, suggesting that children from high risk environments may learn to better recognize others' needs (Kraus & Keltner, 2009; Kraus, Piff, & Keltner, 2009). In contrast, positive parenting, intergenerational closure, and child-centered social control had promotive effects on outcomes such as altruistic behavior or empathy. Yet, another unexpected finding was the link between positive parenting and decreased self-efficacy for peer interaction, which supported an emerging body of research that has highlighted how certain forms of praise may undermine children's social-emotional development (Henderlong & Lepper, 2002). The findings suggest that ecological predictors represent promising targets for bolstering youth prevention efforts, although some conventionally promotive factors may require further study.

In addition, we assessed the moderating roles of gender and race/ethnicity to account for the complex nature of these associations. We identified differential

associations between our predictors and outcomes across gender and race/ethnicity groups. With regard to the moderating role of gender, for instance, we determined that some ecological predictors influenced a broader range of outcomes among boys but not girls (e.g., socio-demographic risk) and vice versa (e.g., positive parenting). Similar findings emerged for children from different racial/ethnic backgrounds. Among Black children, for example, poor parental monitoring/supervision was strongly associated with negative social-emotional learning outcomes (e.g., normative beliefs about aggression). With regard to community characteristics, their impacts varied greatly between boys and girls as well as children of different racial/ethnic backgrounds. Nevertheless, community characteristics were associated with an array of social-emotional learning outcomes for all groups, highlighting the potential role of community-level interventions in prevention efforts.

Chapter 3. Ecological Influences on Children's Social-Emotional Competence and Behavior Trajectories

We used growth mixture modeling (Muthén, 2004) in this study to identify subgroups of children based on their developmental trajectories of social-emotional competence and behavior from grade 3 to grade 5. Three heterogeneous trajectories of development emerged during this transitional period for each of our social, emotional, and behavioral outcomes. Our results showed that altruistic behavior development between middle and late childhood may be characterized by moderate-stable, moderate-increasing, and high-decreasing trajectories, while empathy development may be characterized by moderate-stable, moderate-decreasing, and moderate-late decrease trajectories. Meanwhile, self-efficacy for peer interaction followed moderate-stable, low-

late increase, and moderate-late decrease trajectories. With regard to our negative outcomes, we found that children's normative beliefs about aggression development comprised moderate-stable, high-increase-decrease, and moderate-fast increase trajectories, while ADHD-related behavior comprised moderate-stable, moderate-increase-decrease, and high-decreasing trajectories. We observed that most youth followed moderate-stable trajectories of development between middle and late childhood. Consistent with our hypotheses, children with positive and negative social-emotional competence and behavior trajectories still emerged. Thus, prevention efforts should be tailored to ensure that children maintain stable or increasing trajectories of altruistic behavior, empathy, and self-efficacy for peer interaction or decreasing trajectories of normative beliefs about aggression and ADHD-related behavior.

This study also explored the influence of ecological predictors on children's social-emotional competence and behavior trajectories. Contrary to what we expected, positive parenting at grade 3 increased children's likelihood of following a high-decreasing trajectory of altruistic behavior as well as a moderate-late decrease trajectory of self-efficacy for peer interaction. Although positive parenting might undermine altruistic behavior and self-efficacy for peer interaction development for some children, our findings showed that it could also promote empathy development. These associations suggested that positive parenting may be beneficial for children in certain social, emotional, and behavioral developmental domains. In others, however, it may yield undesirable outcomes such as decreased intrinsic motivation and autonomy (Henderlong & Lepper, 2002). Consistent with our hypotheses, socio-demographic and community risk negatively influenced children's social, emotional, and behavioral development. For

example, in line with social disorganization theory (Duncan & Raudenbush, 1999), these unfavorable ecological contexts positively predicted increasing trajectories of normative beliefs about aggression among children (e.g., high-increase-decrease trajectory). Contrary to our hypotheses, home, parental, and community characteristics in grade 3 were not significantly associated with ADHD-related behavior trajectories in children. Thus, it is possible that individual factors (e.g., genetic or biological) may play a greater role in the course of children's ADHD behavior development than previously expected (Faraone et al., 2005). Overall, the research showed that ecological characteristics had significant influences on children's social-emotional competence and behavior trajectories. Targeting their home, parental, and community characteristics during middle childhood may improve their developmental outcomes.

Chapter 4. Ecological Predictors and Behavioral Outcomes of Children's Social-Emotional Competence Profiles

Using latent profile analysis, this study sought to determine whether children may be distinguished based on their social-emotional competence profiles between grades 3 and 5. In support of our hypotheses, we found that children may be distinguished based on their social-emotional competence profiles across grades 3 through 5. The subtypes that emerged consistently included those with "normative," "maladaptive," and "antisocial" competence profiles across grades 3 to 5, which indicated the structural stability of these profiles. The normative group was typically the largest group across grades 3 through 5, and included children with the highest levels of empathy and lowest levels of normative beliefs about aggression and ADHD-related behavior. The maladaptive subtype represented the second largest group and had slightly lower levels of

empathy and higher levels of normative beliefs about aggression and ADHD-related behavior compared to the normative subtype. Finally, the antisocial group had the lowest empathy scores and highest normative beliefs about aggression and ADHD-related behavior scores. In this chapter, we noted that the prevalence of children with antisocial profiles of social-emotional competence ranged between 1.8% and 3.4%, which was lower compared to prior research estimating that 3% to 9% of youth exhibit behavioral characteristics consistent with antisocial personality disorder (Sprague & Walker, 2000). However, earlier studies using nationally representative samples of adults have estimated the median age of onset for behavioral problems to be 11 years (Kessler et al., 2005). Thus, given that the mean age of the children in our sample was 8.6 years, it is possible that our investigation identified children with unfavorable social-emotional competence profiles who could be at risk for antisocial behaviors later in life.

Although we initially hypothesized self-efficacy for peer interaction to be indicative of a positive social-emotional competence profile, we found that antisocial children consistently scored high on this measure across all data collection waves. Our results partially supported earlier research suggesting that aggressive youth may have higher levels of self-esteem (Baumeister, Sharp, & Boden, 1996; Bushman et al., 2009). However, we also note that self-efficacy levels were comparable for all social-emotional competence profiles in grade 5, which may explain the mixed research (Ostrowsky, 2010; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Our findings highlight the complex link between self-efficacy and children's social-emotional competence, particularly between middle and late childhood.

Our study also evaluated the extent to which concurrent ecological characteristics influenced children's social-emotional competence profiles between grades 3 and 5. In line with our hypotheses, we found that concurrent home, parental, and community characteristics significantly influenced children's social-emotional competence profiles. Socio-demographic and community risk were positively associated with negative social-emotional competence profiles (e.g., normative and antisocial), particularly in grades 3 and 4. Thus, home and community-based interventions may be needed to prevent negative social, emotional, and behavioral outcomes among children. Meanwhile, few ecological characteristics distinguished between children with maladaptive and antisocial profiles, with the exception of poor parental monitoring and supervision. These results continue to highlight the essential role that parents and caregivers play in children's social, emotional, and behavioral development. Of particular importance may be fostering open and communicative relationships between caregivers and youth during middle and late childhood (Kerr & Stattin, 2000; Stattin & Kerr, 2000).

Finally, we examined associations between children's social-emotional competence profiles and later behavioral outcomes. As expected, children with negative social-emotional competence profiles (e.g., maladaptive and antisocial) were less likely to engage in positive behaviors and more likely to engage in problem behaviors. The behavioral outcomes of children were measured in data collection waves following the identification of their social-emotional competence profile. Thus, these findings support the predictive validity of the profiles that emerged in our study. Moreover, given the adverse behavioral outcomes associated with children exhibiting maladaptive and antisocial profiles, interventions efforts will be particularly important during this

developmental period. Programs such as Positive Behavioral Interventions and Supports (PBIS), which use multi-tiered prevention strategies to reduce disruptive behaviors in youth, represent a promising approach that can be tailored to target children with specific social-emotional competence profiles and address their negative outcomes (Bradshaw, 2013; Bradshaw et al., 2012).Children with negative social-emotional competence profiles (e.g., maladaptive or antisocial) may benefit from the indicated intervention strategies offered in these programs.

5.2 Limitations and Future Directions

Limitations

There are some limitations worth considering in the interpretation of the findings reported in this thesis. For example, we chose to focus specifically on the developmental period between middle and late childhood given the lack of research focusing on this stage. However, we acknowledge that this might not fully capture social-emotional learning across childhood and may restrict the generalizability of our findings to this specific developmental period. Accordingly, additional research is needed to investigate how both risk and promotive factors found in home, parental, and community ecological contexts may impact children's social, emotional, and behavior outcomes across multiple developmental periods. Moreover, we note that the set of ecological predictors and social, emotional, and behavioral outcomes included in our research might not be exhaustive. Nevertheless, our findings still make substantial contributions to the scientific literature given the breadth of ecological risk and promotive factors evaluated in this study. Furthermore, the outcomes evaluated in our research included those previously determined to be crucial to successful youth development (Zins et al., 2007). Continued

efforts to identify additional ecological predictors of children's social, emotional, and behavioral outcomes over time will help to advance future prevention efforts by identifying meaningful targets for intervention programs.

Another limitation in these studies is the use of self-report measures. For example, empathy, self-efficacy for peer interaction, and normative beliefs about aggression were based on children's own reports of their attitudes. Meanwhile, parents reported their own parenting behaviors. The accuracy of these measures may be limited by social desirability bias. Despite these disadvantages, self-report measures have been shown to reflect individual attitudes accurately as well as predict future behaviors, which lend support to the validity of such assessments (Andershed, Gustafson, Kerr, & Stattin, 2002). Moreover, the ability of self-report assessments to evaluate attitudes has been shown for measures of both empathy and aggression (Funk, Fox, Chan, & Curtiss, 2008). To offset this limitation, our studies used previously validated instruments (Kaminski et al., 2009). Furthermore, we utilized multiple informants to report children's behaviors if such data were available. Future studies may consider using additional multi-method multi-informant measures to investigate participant behaviors, especially through direct observations (Gardner, 2000).

Considering the observational design and use of advanced modeling techniques in this thesis research, there are some limitations and statistical assumptions that should be noted as well. First, the observational design of this study precluded us from making conclusions regarding causal associations or mechanisms. Nevertheless, the advanced statistical techniques used in this study allowed us to generate robust hypotheses regarding the associations between the ecological predictors and social, emotional, and

behavioral outcomes, which are crucial to our efforts to identify modifiable predictors for designing evidence-based intervention programs (Schneider & American Educational Research Association, 2007). These methods, however, require certain conditions to be met to yield valid findings. For example, person-centered analytic approaches assume the following: within-class conditional normality, properly specified mean and covariance structure, linear effects of exogenous predictors, data are missing at random, and independence between the sampled individuals (Bauer, 2007). We posit that we likely have met such assumptions considering our large analytic sample, use of optimized measures developed by the SACD Program, and inclusion of demographic characteristics as covariates (Muthén & Satorra, 1995; Kaminski et al., 2009; Stapleton, 2006).

Directions for Future Research

In light of our study findings, we present areas for exploration in future search. A consistent finding in our endeavors to assess the influence of ecological predictors on children's social, emotional, and behavioral development is the important role of parenting practices between middle and late childhood. Specifically, the results of the thesis research showed that parental monitoring and supervision, as well as positive parenting, could yield both promotive and risk influences. We must note, however, that the measures used to assess parenting in our studies were largely global in nature. Concerning parental monitoring and supervision, for example, we did not distinguish parental monitoring from child disclosure and parental knowledge, solicitation, or control, factors which might better explain differences in children's developmental outcomes (Stattin & Kerr, 2000). With regard to positive parenting, the type of praise used represents an important consideration in research (Henderlong & Lepper, 2002).

Alternatively, future studies should include a broader assessment of parenting by incorporating measures for parenting styles, such as authoritative, authoritarian, permissive, or rejecting-neglecting (Baumrind, 1991).

Although our studies examined associations between middle childhood ecological predictors and children's social, emotional, and behavioral outcomes, we did not account for the dynamic nature of these contextual influences. Thus, future studies should investigate how changes in ecological contexts may affect the array of outcomes addressed in this thesis research, such as measures, trajectories, or profiles of children's social, emotional, and behavioral outcomes (Evans, 2006). Beyond our consideration of ecological predictors, furthering our understanding of the mechanisms that link these characteristics to social, emotional, and behavioral outcomes will also be important. Considering the growing importance of developmental cascade models, determining the mediators that link ecological predictors to children's outcomes will shed light on additional modifiable factors that may be targeted in intervention efforts (Sameroff & MacKenzie, 2003). Meanwhile, identifying moderators of these associations will provide important information on which individuals may be more likely to respond to certain intervention strategies.

Previously, we discussed how social-emotional learning is conceptually grounded in research concerning children's positive development through competence and resiliency factors (Durlak et al., 2011). The findings in this thesis will contribute substantially to our knowledge of the development of competence among children. However, the role of resilience in children's development warrants further research. Resilience has been defined as one's ability to achieve positive or successful outcomes in

spite of serious threats to their adaptation or development (Masten, 2001). While this thesis primarily sought to identify modifiable ecological predictors of children's competence to advance intervention efforts, the emergence of resilient children in some of our studies cannot be ignored. In Chapter 3, for instance, we identified subgroups of children with trajectories of positive social-emotional competence and behavior development in spite of residing in adverse ecological contexts. These individuals might represent a group of resilient children from whom we may obtain crucial knowledge for developing more effective prevention programs.

5.3 Strengths

This thesis research had several notable strengths. One of the key strengths was the large and diverse sample used in our studies, which included racial/ethnic minorities and students from low socioeconomic status households. Having a large sample afforded us with sufficient power to detect small effect sizes and utilize advanced statistical modeling techniques (Fritz & MacKinnon, 2007; Muthén & Muthén, 2002). Moreover, the large sample size enabled us to detect several subgroups of children in our latent profile analyses or developmental trajectories in our growth mixture modeling, despite our inclusion of numerous ecological predictors as covariates (Nylund et al., 2007). Furthermore, using a diverse sample improved our ability to generalize our results while addressing our research questions using gender- and culturally-informed approaches.

Another advantage of studying a diverse sample of children was that it allowed us to assess the influence of race/ethnicity on associations between multiple ecological predictors and children's social, emotional, and behavioral outcomes. In studying these relationships, this thesis research helped to disentangle the complexity in how

sociocultural characteristics (e.g., race/ethnicity and socio-demographic risk) might affect children's development. Prior efforts to determine the link between children's social-emotional outcomes and race/ethnicity have been limited due to confounding by socio-demographic factors, or vice versa (Quintana et al., 2006). However, our work unpacked the contributions of these characteristics through investigating how socio-demographic risk might influence children's outcomes across race/ethnicity groups. Advancing the literature further, our research incorporated a broader focus that extended beyond just studying race/ethnicity and socio-demographic risk by accounting for additional ecological predictors spanning multiple contexts, such as the home, family, and community (Caughy, Nettles, O'Campo, & Lohrfink, 2006; Quintana et al., 2006).

As previously discussed, there are critical gaps in the extant literature regarding the longitudinal associations between home, parental, and community characteristics and children's social, emotional, and behavioral outcomes, particularly during the transition from middle to late childhood. The prospective nature of our data presented us with the opportunity to assess the temporal associations between our hypothesized predictors and outcomes. Moreover, the broad range of measures obtained at each of the five data collection waves allowed us to adjust for key variables assessed at earlier time points in our models. This allowed us to make stronger conclusions about the change and directionality of the associations that we investigated in this thesis (Cole & Maxwell, 2003). Overall, this data allowed us to make more robust conclusions about the associations that we observed from our hypothesized models.

The use of measures that were derived, optimized, and validated from the core set of instruments administered by the Social and Character Development Program

represented another strength of this study (Kaminski et al., 2009). Although researchers from the SACD Program utilized well-established assessments to investigate their outcomes, there was no guarantee that their original measures were optimal for the SACD sample. To address this, the SACDRC (2010) derived their own measures for the social, emotional, and behavioral outcomes using exploratory and confirmatory analytic techniques (Bollen, 1989). This resulted in measures that had better psychometric properties (e.g., greater internal consistency) for our sample than the original assessments. The measures we used were also more robust to statistical assumptions (e.g., minimal inter-correlations between scales), invariant across subgroups (e.g., gender, race/ethnicity, and program site), and stable across assessment periods (Kaminski et al., 2009). Ultimately, these new measures reduced the possibility of measurement error, which was especially important to minimize for the analyses we employed across all studies in this thesis research.

Because our data included a large sample size with repeated measures, we were able to use advanced statistical techniques to address our aims. Advanced modeling techniques, such as latent variable modeling approaches, permitted us to examine the various associations between our variables of interest as well as account for differences between individuals in our sample (Bollen, 1989; McCutcheon, 1987). Using structural equation modeling, for example, we were able to generate hypotheses regarding the relationships between multiple ecological predictors and several key social, emotional, and behavioral outcomes in children (Schneider & American Educational Research Association, 2007). More importantly, structural equation models allowed us to account for the unreliability of measurement and improved our ability to examine our

hypothesized associations accurately. Meanwhile, our use of growth mixture models allowed us to account for how characteristics such as social-emotional competence and behavior varied not only by time but also across individuals (Muthén, 2004). As a result, we were able to determine whether children followed several different trajectories of change over time. Alternatively, latent profile analysis enabled us to investigate whether children could be distinguished by their profiles of social-emotional competence, and to assess the extent to which ecological characteristics influenced these profiles or determine whether the structure of these profiles changed over time. In using these methodologically rigorous approaches, we were ultimately able to gain a better understanding of children's social, emotional, and behavioral development, which bolsters our ability to inform prevention programs

5.4 Public Health Significance and Implications

Public Health Significance

This thesis research is one of few studies to investigate children's social, emotional, and behavioral development between middle and late childhood using a large and diverse sample of youth. Furthermore, the findings presented in this thesis substantially contribute to our understanding of how ecological predictors influence children's outcomes. Researchers have long understood that a child's social, emotional, and behavioral development occurs in multiple nested contexts, such as schools, families, and communities (Bronfenbrenner & Morris, 1998). Accordingly, prevention efforts have sought to promote the healthy physical, social, and psychological development of youth in a variety of settings (Kellam, Koretz, & Moscicki, 1999; Kellam & Langevin, 2003; Kellam, 1990). School-based behavioral intervention programs have been particularly

popular and widely studied by developmental researchers. Through these efforts, school-based programs such as Promoting Alternative Thinking Strategies (PATHS; Kam, Greenberg, & Kusche, 2004) or the Good Behavior Game (GBG; Petras et al., 2008; Werthamer-Larsson, Kellam, & Wheeler, 1991) were shown to be promising for reducing behavior problems among children. However, studies have suggested that some school-based interventions may otherwise yield smaller effects than desired or were more effective for children at greatest risk for negative outcomes (Hahn et al., 2007; Wilson, Lipsey, & Derzon, 2003; Wilson & Lipsey, 2007). Considering how some interventions may be more beneficial for at-risk youth, it will be crucial to assess the heterogeneity of social-emotional competence and behavior among children and identify those who may be in greater need for indicated efforts.

As potential alternatives to school-based interventions, there has also been considerable work towards developing family-based prevention programs for children. The theoretical basis of these programs is that families serve as the primary socializing agent for children (Patterson et al., 1989). As such, family contexts play pivotal roles in children's development (Brook, Cohen, Whiteman, & Gordon, 1992; Frojd, Marttunen, & Kaltiala-Heino, 2011; Kellam et al., 2008b; Kellam, Ling, Merisca, Brown, & Ialongo, 1998). Studies have shown that family-based interventions such as the Incredible Years (Reid, Webster-Stratton, & Hammond, 2003; Webster-Stratton, 2005) or the Positive Parenting Program (Triple P; Hoath & Sanders, 2002; Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Prinz et al., 2001; Sanders et al., 2008) may be effective in reducing negative outcomes among children. These types of interventions have typically focused on improving parenting skills, monitoring, and disciplinary practices. This illustrated the

need for more research to evaluate the influences of additional ecological contexts on children's developmental outcomes.

In light of how most studies have focused on the school climate or parent-child relationships, this thesis closely examined the impact of multiple contexts on children's developmental outcomes. For instance, our findings showed that positive parenting was a key predictor of children's empathy. Meanwhile, self-efficacy for peer interaction was influenced by several contextual characteristics, including socio-demographic risk, intergenerational closure, and child-centered social control. We also found that socio-demographic risk was associated with greater ADHD-related behavior in late childhood, while poor monitoring/supervision was associated with normative beliefs about aggression. Using gender- and culturally-informed approaches, we determined which ecological characteristics were more salient for certain groups of children. Thus, the public health significance of this thesis is evidenced by its identification of ecological characteristics to support targeted efforts towards promoting social-emotional competence, increasing pro-social behaviors, and reducing problem behaviors among children who are transitioning through a pivotal developmental period.

Another significant contribution of this thesis research is its advancement of our knowledge of how children's altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior change over time. Examining the stability of these outcomes allowed us to determine whether the transition between middle and late childhood would be appropriate for intervention. Although we found that most children followed moderate-stable trajectories of development, some followed trajectories characterized by negative development (e.g.,

declines in empathy or increases in normative beliefs about aggression). Identifying these individuals in public health efforts will be crucial, as they may represent those in greatest need of indicated prevention strategies (Brown et al., 2008; Magnusson, 1998). Extending our knowledge of children's development, the findings suggested that home, parental, and community characteristics may predict their social, emotional, and behavioral trajectories. Thus, endeavors to improve children's developmental outcomes should encompass programs addressing these domains.

Finally, this thesis furthers public health efforts by identifying children based on their social-emotional competence profiles. The determination that children may exhibit normative, maladaptive, or antisocial profiles of social-emotional competence greatly enhances our knowledge of their development. Moreover, our examination of associations between social-emotional competence profiles and home, parental, and community characteristics, as well as later behavioral outcomes demonstrated the validity of these groups that emerged in our research. Taken together, the findings highlight the need to screen for children with profiles of negative social-emotional competence (e.g., maladaptive or antisocial), as these children may require indicated intervention strategies to improve their developmental outcomes (Lochman & Conduct Problems Prevention Research Group, 1995). Tailoring programs to the specific needs of children based on their social-emotional competence profile may help to ensure the effectiveness of these endeavors (Bierman, 2002; Bierman et al., 2004; Bierman et al., 2002).

According to the social-emotional learning (SEL) framework adopted by CASEL (Durlak et al., 2011), efforts to support positive youth development should work towards bolstering the following cognitive, affective, and behavioral competencies among

children: (1) self-awareness, (2) self-management, (3) social awareness, (4) relationship skills, and (5) responsible decision-making. In choosing to focus on altruistic behavior, empathy, self-efficacy for peer interaction, normative beliefs about aggression, and ADHD-related behavior, we studied outcomes that closely aligned with the competencies represented in the SEL framework (Zins et al., 2004). Thus, the findings of this thesis research advance the scientific literature on positive youth development by identifying additional modifiable predictors for prevention efforts and highlighting areas for future research. Finally, this thesis provides additional empirical evidence in support of CASEL's programs and policies

Policy Implications

The healthy social, emotional, and behavioral development of children represents a key concern among school and district-level administrators. Research suggests that children's social-emotional learning is strongly associated with later academic achievement and success (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Campbell & Ramey, 1994). Although federal mandates have emphasized academic achievement and testing in recent years, bolstering children's social-emotional learning must be a priority. In classrooms, for example, problem behaviors impede other students' ability to learn, contribute to teacher burn out, and consume administrative time (Byrne, 1999; Osher et al., 2010; Tremblay, LeBlanc, & Schwartzman, 1988; Tremblay et al., 1992). Children engaging in these types of behaviors are often subjected to punitive and reactive disciplinary programs, which do not necessarily alter their trajectories for better outcomes in adulthood (Walker & Shinn, 2002).

This thesis research has direct federal policy implications. These past several years, federal policymakers have begun to recognize the need to promote social-emotional learning in schools. On December 8, 2009, House Representative Dale Kildee (D – Michigan) introduced the Academic, Social, and Emotional Learning Act (H. R. 4223, 2009) to congress. Although the bill was not enacted, it would have enabled the U.S. Department of Education to disseminate evidence-based social-emotional learning programs to schools, provide educators with resources to promote childhood learning and development, and bolster research efforts to design effective social and emotional learning programs. Meanwhile, Representative John Kline (R – Minnesota) introduced the Student Success Act (H. R. 3989, 2012) on February 9, 2012; this proposed policy included provisions for training teachers to meet the social and emotional developmental needs of students. Despite being referred to committees in the House of Representatives, this bill ultimately failed to advance.

More recently, there have been renewed efforts by federal policymakers to support social-emotional learning in schools. For example, Representative Kline re-introduced the Student Success Act (H. R. 5, 2013), which ultimately passed in the House of Representatives but awaits a vote in the Senate. And on September 18, 2013, House Representative Bruce Braley (D – Iowa) introduced the Successful, Safe, and Healthy Students Act (H. R. 3122, 2013), which listed the development of social and emotional competencies as an important activity in schools. This bill has been referred to the House Education and the Workforce committee. On May 8, 2013, another version of the Academic, Social, and Emotional Learning Act (H. R. 1875, 2013) was introduced by House Representative Tim Ryan (D – Ohio) and was also referred to the House

Education and the Workforce committee. In the context of these endeavors, our findings provide additional tangible evidence for policymakers and advocates that demonstrate the importance of supporting social-emotional learning among youth. Cultivating support for research and public health programming for children represent pivotal steps toward ensuring their developmental success

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CURRICULUM VITAE

Jeffrey Duong, MHS

Contact Information

Address
Department of Mental Health
Johns Hopkins Bloomberg School of Public Health
624 N. Broadway; Room 886
Baltimore, MD 21205

Phone
Office: 443-287-8630
Mobile: 925-788-9863

E-mail
jduong2@jhu.edu

Education

2018 MD - University of California, Davis - School of Medicine (Sacramento, CA)

2014 PhD - Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)
Department. Mental Health
Dissertation Title. Ecological Predictors of Children's Social, Emotional, and Behavioral Outcomes
Co-Advisor. Catherine Bradshaw, PhD
Co-Advisor. George Rebok, PhD
Certificates. Health Education; Health Communications; Maternal and Child Health

2009 MHS - Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)
Department. Mental Health
Thesis Title. Parental Responses to their Child's Bullying Experiences
Thesis Advisor. Catherine Bradshaw, PhD
Academic Advisor. Holly Wilcox, PhD

2008 BA - The Johns Hopkins University (Baltimore, MD)
Major. Public Health Studies
Honors. Departmental Honors
Thesis Title. The Repetitive Behaviors of Individuals With Cornelia de Lange Syndrome In Relation to Sensory Processing and Maladaptive Behaviors
Thesis Advisor. Marco Grados, MD, MPH
Academic Advisor. James Goodyear, PhD

Honors & Awards

2010-2014 **Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)**
Award. The Hopkins Sommer Scholarship
Description. Full-tuition scholarship awarded to students who have demonstrated "leadership, energy, scientific excellence, ambition, political acumen, and determination to change the world."

2012 **American Public Health Association; Mental Health Section (Washington, DC)**
Award. Kenneth Lutterman Student Research Award
Description. Research award for paper on "Depressive Symptoms and Suicidal Behavior among Bullied Sexual Minority Youth in High School."

2012 **The Johns Hopkins University, Johns Hopkins Medical Institutions, and Johns Hopkins Hospital (Baltimore, MD)**
Award. Martin Luther King, Jr. Award for Community Service
Description. Recognition granted to members of the Johns Hopkins University who demonstrate the spirit of volunteerism, citizenship, and activism that characterized Martin Luther King, Jr.'s life.

2008 **The Johns Hopkins University; Department of Public Health Studies (Baltimore, MD)**
Award. Certificate for Honors in the Department of Public Health Studies
Award. Certificate for Outstanding Involvement in the Department of Public Health Studies

2008 **The Johns Hopkins University; Center for Social Concern (Baltimore, MD)**
Award. Certificate for Outstanding Service

2005 **Interwest Consulting Group (Sacramento, CA)**
Award. Scholarship Award

Grants & Fellowships

2012-2013 **The Johns Hopkins University; Krieger School of Arts and Sciences (Baltimore, MD)**
Fellowship. Dean's Teaching Fellowship
Course title. Youth Bullying, Aggression, and Public Health
Role. Primary Instructor

2012 (Summer) **RAND Corporation (Los Angeles, CA)**
Fellowship. Graduate Student Summer Associates Program
Project Title. Towards a Better Understanding of How Coroners and Medical Examiners Make Manner of Death Determinations in California: Implications for Policy and Research
Role. Principal Investigator

2011-2012 **The Johns Hopkins Urban Health Institute (Baltimore, MD)**
Grant. Graduate Student-Community Project Grant ($5,000)
Project Title. Health, Education and Recreation – Meaningful Experiences Tweet and Tumblr (HEaR ME Tweet and Tumblr) Project at Heart's Place Shelter
Project Aims. This project aimed to empower members of the homeless community to utilize social networking and microblogging sites (e.g., Facebook, Twitter, and Tumblr) and to educate members of the public about the experiences of the homeless in Baltimore City.
Role. Program Co-founder/Coordinator

2012 **Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)**
Grant. Student Assembly Student Conference Fund Grant ($250)

2011 (Summer) **New York City Department of Health and Mental Hygiene (New York, NY)**
Fellowship. EpiScholars Program
Project Title. Socioeconomic Differences in the Prevalence of Serious Mental Illness among Individuals with Chronic Disease
Role. Principal Investigator

2010-2011 **The Albert Schweitzer Fellowship (Baltimore, MD & Boston, MA)**
Fellowship. Baltimore Albert Schweitzer Fellowship
Project Title. Health, Education and Recreation – Meaningful Experiences (HEaR ME) at Heart's Place Shelter
Project Aims. This project aims to reduce the stigma associated with homelessness among community members.
Role. Project Leader/Program Founder

2009-2010 **The Johns Hopkins University; Preparedness and Emergency Response Research Center (Baltimore, MD)**
Grant. CDC Pilot Project Grant ($10,000)
Project Title. First Responders' Beliefs and Attitudes Toward Individuals with Mental Illness during a Disaster
Role. Co-Investigator

2007 **Travelocity; Travel for Good Program (Southlake, TX)**
Grant. Change Ambassadors Grant ($5,000)
Project Title. Carmen Alto Community Health Clinic in Ayacucho, Peru
Role. Volunteer medical assistant

Publications

1. **Duong, J.**, & Bradshaw, C. P. (In Press). The influence of school connectedness on the relationship between victimization and suicidal and aggressive behaviors among sexual minority youth. *Journal of School Health.*

2. **Duong, J**., & Bradshaw, C. P. (2013). Using the extended parallel process model to examine teachers' likelihood of intervening in bullying. *Journal of School Health, 83*(6), 422-429.

3. Waasdorp, T. E., Bradshaw, C. P., & **Duong, J.** (2011). The link between parents' perceptions of the school and their responses to school bullying: Variation by child characteristics and the forms of victimization. *Journal of Educational Psychology, 103*(2)*,* 324-335.

Manuscripts Under Review

1. **Duong, J.**, Koegler, E., Redstone, L., Shannon, K., Peters, J., An, S., Aung, W., Nadison, M., Pronovost, P. J., & Aslakson, R. A. (Under Review). Perceptions of high and low quality care in surgical intensive care units among patients and their families. *Critical Care Medicine.*

2. **Duong, J.,** & Bradshaw, C. P. (Under Review). Household income level as a moderator of associations between chronic health conditions and serious mental illness. *Journal of Community Psychology.*

3. **Duong, J**., & Bradshaw, C. P. (Under Review). The influence of home, parental, and community predictors on social emotional competence and behavior: The moderating role of gender and race. *Journal of Educational Psychology*

Manuscripts In Preparation

1. **Duong, J**., & Bradshaw, C. P. (In Preparation). Ecological influences on children's social emotional competence and behavior trajectories.

2. **Duong, J.,** & Bradshaw, C. P. (In Preparation). Associations between bullying and internalizing problems by sexual orientation and grade level.

3. **Duong, J.**, & Bradshaw, C. P. (In Preparation). Racial/ethnic differences in the association between sexual orientation and violent and delinquent behaviors among bullied youth.

Book Chapters

1. **Duong, J.**, & Bradshaw, C. P. (In Press). Chapter 24. Bullying and suicide prevention: Taking a balanced approach that is scientifically informed. In P. B. Goldblum, D. Espelage, J. Chu, & B. Bongar (Eds.), *The challenge of youth suicide and bullying*. Oxford, UK: Oxford University Press.

2. **Duong, J.,** & Bradshaw, C. P. (Prospectus Under Review). Chapter 14. Bullying and youth suicide: The role of mental health. In C. P. Bradshaw (Ed.), *Handbook of bullying research for social workers*.

Conferences and Presentations

1. **Duong, J.,** & Bradshaw, C. P. (2014, May). Associations between bullying and internalizing problems by sexual orientation and grade level. Poster presented at the Society for Prevention Research (SPR) 22nd Annual Meeting. Washington, DC.

2. **Duong, J.**, & Bradshaw, C. P. (2013, April). Victimization and violent behavior among high school youth: differential associations by sexual orientation and obesity. Poster presented at the Society for Research in Child Development (SRCD) 2013 Biennial Meeting. Seattle, WA.

3. Aslakson, R., Koegler, E., Moldovan, R., Shannon, K., Peters, J., Redstone, L., An, S., **Duong, J.**, Nadison, M., & Pronovost (2013, March). Intensive care unit nurses and palliative care: perceptions and recommendations. Poster presented at the American Academy of Hospice and Palliative Medicine & Hospice and Palliative Nurses Association Annual Assembly. New Orleans, LA.

4. **Duong. J.**, Koegler, E., Peters, J., Aung, W., An, S. J., Redstone, L., Shannon, K., Nadison, M., Pronovost, P., & Aslakson, R. (2013, January). Perceptions of high and low quality care in surgical intensive care units among patients and their families. Poster presented at the Society of Critical Care Medicine Annual Congress. San Juan, Puerto Rico.

5. **Duong, J.**, & Bradshaw, C. P. (2012, October). Depressive symptoms and suicidal behavior among bullied sexual minority youth in high school. Kenneth Lutterman Student Research Award Paper presented at the American Public Health Association (APHA) 140th Annual Meeting. San Francisco, CA.

6. Shannon, K., Peters, J., Redstone, L., An, S., Aung, W., **Duong, J.**, Koegler, E., Nadison, M., Pronovost, P. J., & Aslakson, R. A. (2012, October). Perceptions of the terms "palliative care" and "palliative medicine" amongst surgical ICU nurses, surgeons, and critical care anesthesiologists. Poster presented at the American Society of Anesthesiology Meeting. Washington, DC.

7. **Duong, J.**, Zablotsky, B., & Bradshaw, C. P. (2012, May). The influence of school connectedness on the relationship between victimization and suicidal and aggressive behaviors among sexual minority youth. Poster presented at the Society for Prevention Research (SPR) 20th Annual Meeting. Washington, DC.

8. Zablotsky, B., **Duong, J.**, & Bradshaw, C. P. (2012, May). Identifying children with autism spectrum disorder who bully. Poster presented at the Society for Prevention Research (SPR) 20th Annual Meeting. Washington, DC.

9. **Duong, J.**, & Bradshaw, C. P. (2012, April). Using the extended parallel process model to understand how likely teachers will intervene with bullying. Paper presented at the American Educational Research Association (AERA) 2012 Annual Meeting. Vancouver, BC, Canada.

10. **Duong, J.**, & Bradshaw, C. P. (2012, March). Racial/ethnic differences in the association between sexual orientation and violent and delinquent behaviors among bullied youth. Poster presented at the Society for Research on Adolescence (SRA) 14th Biennial Meeting. Vancouver, BC, Canada.

11. **Duong, J.**, Sawyer, A., Hayat, M., & Rose, L. (2011, November). Beliefs and attitudes of first responders: An assessment of their willingness to assist persons with severe mental illness during a disaster. Poster presented at the American Public Health Association (APHA) 139th Annual Meeting. Washington, DC.

12. **Duong, J.**, Driver, C. R., & Goldmann, E. (2011, August). Socioeconomic differences in the prevalence of serious mental illness among individuals with chronic disease. Presentation given at the New York City Department of Health and Mental Hygiene. New York City, NY.

13. Waasdorp, T. E., Bradshaw, C. P., & **Duong, J.** (2010, June). The role of parents in preventing school bullying. Paper presented at the Society for Prevention Research (SPR) 18th Annual Meeting. Denver, CO.

14. Grados, M., Srivastava, S., Landy, C., Clark, B., **Duong, J.**, & Kline, A. (2008, June). The behavioral phenotype of Cornelia de Lange syndrome in relation to autism. Presentation at the 3rd Scientific Cornelia de Lange Syndrome Symposium. Chicago, IL.

15. **Duong, J.** (2008, May). The repetitive behaviors of individuals with Cornelia de Lange syndrome in relation to sensory processing and maladaptive behaviors. Paper presented at the Johns Hopkins University Undergraduate Research Symposium. Baltimore, MD.

Ad Hoc Reviewer

2012-Present	*American Journal of Public Health*
2014	*Prevention Science*
2014	*Journal of Educational Psychology*
2013	*Journal of School Health*
2012	*Behavioral Disorders*
2011	*Criminology*

Teaching Experience

Course Instruction

2013 (Spring Term) **The Johns Hopkins University; Krieger School of Arts and Sciences**
(Baltimore, MD)
Course Title. Youth Bullying, Aggression, and Public Health (AS.280.217.01)
Course Review.
Overall Quality: 4.24/5.00
(University Mean: 3.93; Dept. Mean: 4.05)
Teaching Quality: 4.24/5.00
(University Mean: 3.95; Dept. Mean: 4.08)
Intellectual Quality: 4.29/5.00
(University Mean: 4.03; Dept. Mean: 3.79)
Feedback Quality: 4.88/5.00
(University Mean: 3.75; Dept. Mean: 4.01)

Teaching Assistant Positions

2014 (Spring Term) **The Johns Hopkins University; Krieger School of Arts and Sciences**
(Baltimore, MD)
Course Title. Cultural Factors in Public Health (AS.280.375.01)
Course Instructor. Thomas A. LaVeist, PhD & Debra Furr-Holden, PhD

2013 (Quarter 2) **Johns Hopkins Bloomberg School of Public Health**
(Baltimore, MD)
Course Title. Statistics for Psychosocial Research II: Structural Models (PH.140.658.01)
Course Instructor. Qian Li Xue, PhD

2012 (Quarter 3) **Johns Hopkins Bloomberg School of Public Health**
(Baltimore, MD)
Course Title. Social, Psychological, and Developmental Processes in the Etiology of Mental Health Disorders (PH.330.661.01)
Course Instructor. Catherine Bradshaw, PhD

2011 (Quarter 3) **Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)**
Course Title. Social, Psychological, and Developmental Processes in the Etiology of Mental Health Disorders (PH.330.661.01)
Course Instructor. Catherine Bradshaw, PhD

Didactic Lectures

2013 **The Johns Hopkins University; Krieger School of Arts and Sciences (Baltimore, MD)**
Lecture Title. Youth Bullying, Aggression, and Public Health.
Course Title. Youth Violence Prevention: A Public Health Approach
Course Instructor. Jessika Zmuda, MPH
Location/Date/Time. Gilman 17/October 30, 2013/12:00-1:20pm

2012 **Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)**
Lecture Title. The Influence of School Connectedness on the Relationship between Victimization and Suicidal and Aggressive Behaviors among Sexual Minority Youth
Course Title. Department of Mental Health Wednesday Noontime Seminar.
Location/Date/Time. Hampton House B14B/May 2, 2012/12:15-1:30pm
Course Instructor. Patricia Scott

2011 **The Johns Hopkins University; Krieger School of Arts and Sciences (Baltimore, MD)**
Lecture Title. Campaign Implementation in the Real World: Formative Research. An Application of the Extended Parallel Process Model to Examine First Responders' Willingness to Help Persons with Serious Mental Illness during a Disaster.
Course Title. Behavior Change: Theory and Application
Location/Date/Time. Hodson 213/November 8, 2011/10:30-11:45am
Course Instructor. Lisa Folda, MHS

Research Experience

2012-Present **Johns Hopkins Medical Institutions (Baltimore, MD)**
Division. Anesthesiology & Critical Care Medicine
Principal Investigator. Rebecca Aslakson, MD
Project Title. Health Care Quality in End of Life Care: Promoting Palliative Care in the Intensive Care Unit
Role. Research Assistant/Qualitative Research Consultant

2012 (Summer) **RAND Corporation (Los Angeles, CA)**
Division. RAND Health
Project Title. Towards a Better Understanding of How Coroners and Medical Examiners Make Manner of Death Determinations in California: Implications for Policy and Research
Mentor. Nicole K. Eberhart, PhD
Role. Study Investigator; Graduate Associate (Graduate Student Summer Associates Program)

2009-2011 **Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)**
Division. Department of Mental Health; Biostatistics
Principal Investigator. Elizabeth Stuart, PhD
Role. Data analyst

2011 (Summer) **New York City Department of Health and Mental Hygiene (New York, NY)**
Division. Office of the Executive Deputy Commissioner; Bureau of Mental Hygiene
Project Title. Socioeconomic Disparities in Mental Health among Persons with Chronic Illness in NYC
Mentor. Cynthia Driver, RN, DrPH
Role. Study Investigator; Intern (NYC EpiScholars Program)

2006-2008 **Johns Hopkins Medical Institutions (Baltimore, MD)**
Division. Department of Child and Adolescent Psychiatry
Principal Investigator. Marco Grados, MD, MPH
Role. Research Assistant
Duties. Assisted with child mental health studies. Subject recruitment, data collection and management. Served as liaison between participants and the principal investigator.

2006-2007 **Johns Hopkins Medical Institutions (Baltimore, MD)**
Division. Department of Child and Adolescent Psychiatry
Principal Investigator. Holly Wilcox, PhD
Role. Research Assistant
Duties. Assisted with preparation of pilot family study on Obsessive-Compulsive Disorder.

Other Work/Internship/Volunteer Experience

2012-Present **St. John's United Methodist Church (Baltimore, MD)**
Supervisor. Van Dixon, PhD
Role. Chair; Pastor Parish Relations Committee
Duties. Identify and establish values of church congregation. Ensure spiritual development of church congregation members. Assist pastors by assessing their needs and pastoral ministry, ensuring health and work-life balance, and setting priorities for leadership and service.

2011-2012 **Gay, Lesbian, & Straight Education Network (Baltimore, MD)**
Supervisor. Kay Halle
Role. Consultant
Duties. Assisted with the planning, development, implementation, and evaluation of Safe Space for All Baltimore program, which aimed to reduce the use of biased language in Baltimore City Public Schools and to foster safe and supportive environments for sexual minority youth.

2010-2012 **Heart's Place Homeless Shelter (Baltimore, MD)**
Supervisor. Carol Berman
Role. Project Founder/Director
Duties. Developed and disseminated homelessness stigma reduction program titled, "Health, Education, and Recreation – Meaningful Experiences (HEaR – ME)." Recruited members of the community to plan and execute meaningful activities that improved the quality of life for guests staying at the shelter.

2009-2010 **Public Justice Center (Baltimore, MD)**
Supervisor. Wendy Hess, JD
Role. Volunteer Intern
Duties. Supported youth justice initiative by assisting with preparation of data collection efforts and outreach.

2008-2009 (Winter) **Carmen Alto Health Clinic; Cross-Cultural Solutions (Ayacucho, Peru)**
Supervisor. Marisol Chancos
Role. Medical Assistant
Duties. Volunteered in community health clinic (Pediatrics and OB/GYN services). Assisted with patient interviews and helped with basic duties (e.g., blood pressure, height and weight measurement, phlebotomy).

2005-2008 **Baltimore Rescue Mission Clinic (Baltimore, MD)**
Supervisor. John S. Dalton, MD
Role. Volunteer Medical Assistant
Duties. Conducted patient interviews and collected medical histories related to health concerns.

2005-2008 **Paul's Place (Baltimore, MD)**
Supervisor. Migiam Yiu
Role. Teaching Assistant
Duties. Aided teachers during after-school enrichment program for youth from disadvantaged backgrounds. Mentored children, supervised classroom activities, chaperoned field trips, and assisted with student discipline. Tutored students and provided homework assistance for all subject areas. Advised teachers on curriculum development and program implementation.

2005-2008 **Catholic Charities Hispanic Apostolate (Baltimore, MD)**
Supervisor. Rosa Azcarate
Role. English Language Instructor
Duties. Provided English instruction to Latino immigrants. Implemented curriculum addressing vocabulary, grammar, conversation skills, and acculturation. Designed lesson plans and provided written reports on progress for students following every lesson. Worked with adults in all classroom sizes and of various English proficiency levels.

2005-2008 **Our Daily Bread Soup Kitchen (Baltimore, MD)**
Supervisor. Doris Franz-Poling
Role. Food Service Volunteer
Duties. Assisted with food preparation and worked as server.

Extracurricular Involvement

2011-2012	**Student Assembly;**
	Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)
2011-2012	**Leadership Role.** Vice-President, Awards and Honors
2009-2012	**Mental Health Student Group;**
	Johns Hopkins Bloomberg School of Public Health (Baltimore, MD)
2009-2012	**Leadership Role.** Social/Volunteer Activities Coordinator
2005-2011	**Alpha Phi Omega Community Service Fraternity**
	Leadership Roles.
2010-2011	Service Project Coordinator (Section 86)
2009-2010	Treasurer (Section 86)
Fall 2008	President (Johns Hopkins University Chapter)
Fall 2008	Chartering/Founding Member
	(Univ. of Md., Baltimore County Chapter)
Fall 2007	Vice President, Service (Johns Hopkins University Chapter)
2006-2009	Service Project Coordinator (Johns Hopkins University Chapter)
2005-2009	**Public Health Students Forum;**
	The Johns Hopkins University (Baltimore, MD)
	Leadership Roles.
2008-2009	Graduate Advisor
2007-2008	President
2006-2007	Publicity Chair